SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

I. TECHNICAL DATA

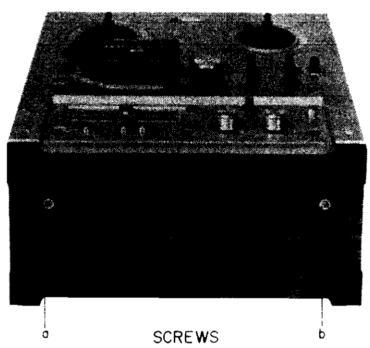
TRACK SYSTEM	4 track, 2 channel stereo/monaural system
REEL CAPACITY	Up to 7" reel
TAPE SPEED	7-1/2 and 3-3/4 ips
WOW AND FLUTTER	Less than 0.09% RMS, 0.17% (DIN 45 500) at 7-1/2 ips Less than 0.18% RMS at 3-3/4 ips
FREQUENCY RESPONSE	30 to 25,000 Hz ±3 dB at 7-1/2 ips 30 to 19,000 Hz ±3 dB at 3-3/4 ips
DISTORTION	Less than 1% (1,000 Hz "0" VU)
SIGNAL TO NOISE RATIO	Better than 56 dB (measured via tape with peak recording level of +6 VU)
ERASE RATIO	Better than 70 dB
BIAS FREQUENCY	100 kHz
HEADS	(3): One GX playback, one GX recording and one erase head
MOTORS	(3): One 4/8 pole self-lubricating hysteresis synchronous capstan drive motor and two eddy current outer-rotor reel drive motor
FAST FORWARD AND REWIND TIME	90 sec using 1,200 ft tape
OUTPUT JACKS	Line (2): 0.775V ("0" VU) Required load impedance: more than 20 k ohms Phone (1): 50 mV/8 ohms
INPUT JACKS	Microphone (2): 0.3 mV/2.2 k ohms Required microphone impedance: 600 ohms Line (2): 70 mV/100 k ohms
DIN JACK	Input 0.3 mV/Output 0.5V
SEMI-CONDUCTORS	Transistors 27, Diodes 17
POWER REQUIREMENTS	CSA, UL and LA Models: 120V, 60 Hz only CEE Models: 220V, 50 Hz only Other Models: 110/120/220/240V, 50/60 Hz switchable
DIMENSIONS	380(W) x 390(H) x 295(D)mm (15.0 x 15.4 x 11.6")
WEIGHT	15.7 kg (34.6 lbs)

* **For improvement purposes, specifications and design are changed without notice.**

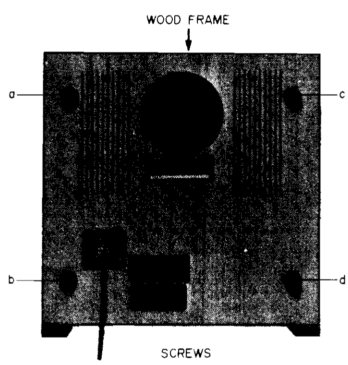
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

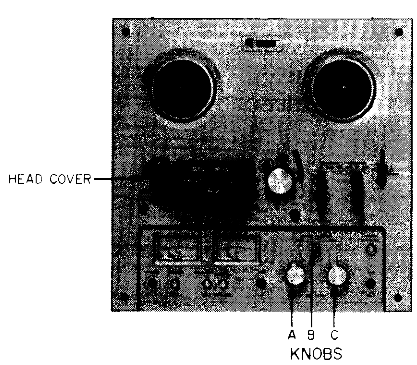
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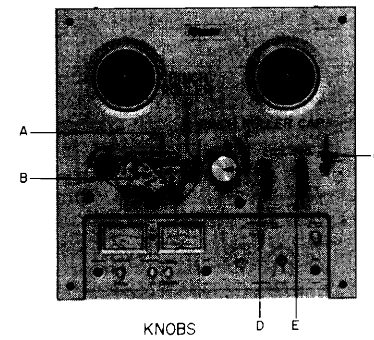
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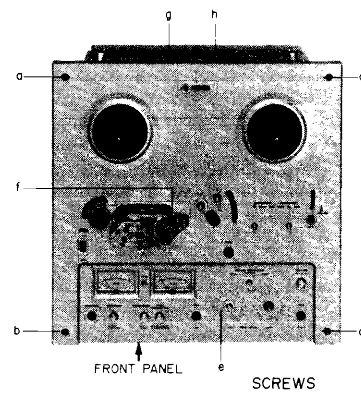
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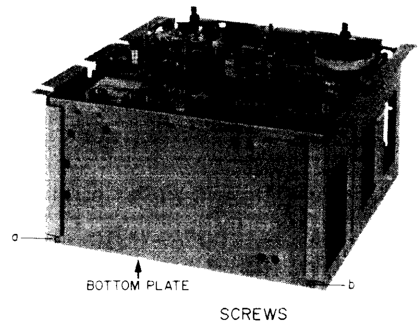
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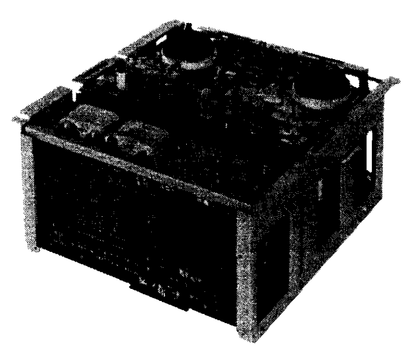
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6



7



III. CONTROLS

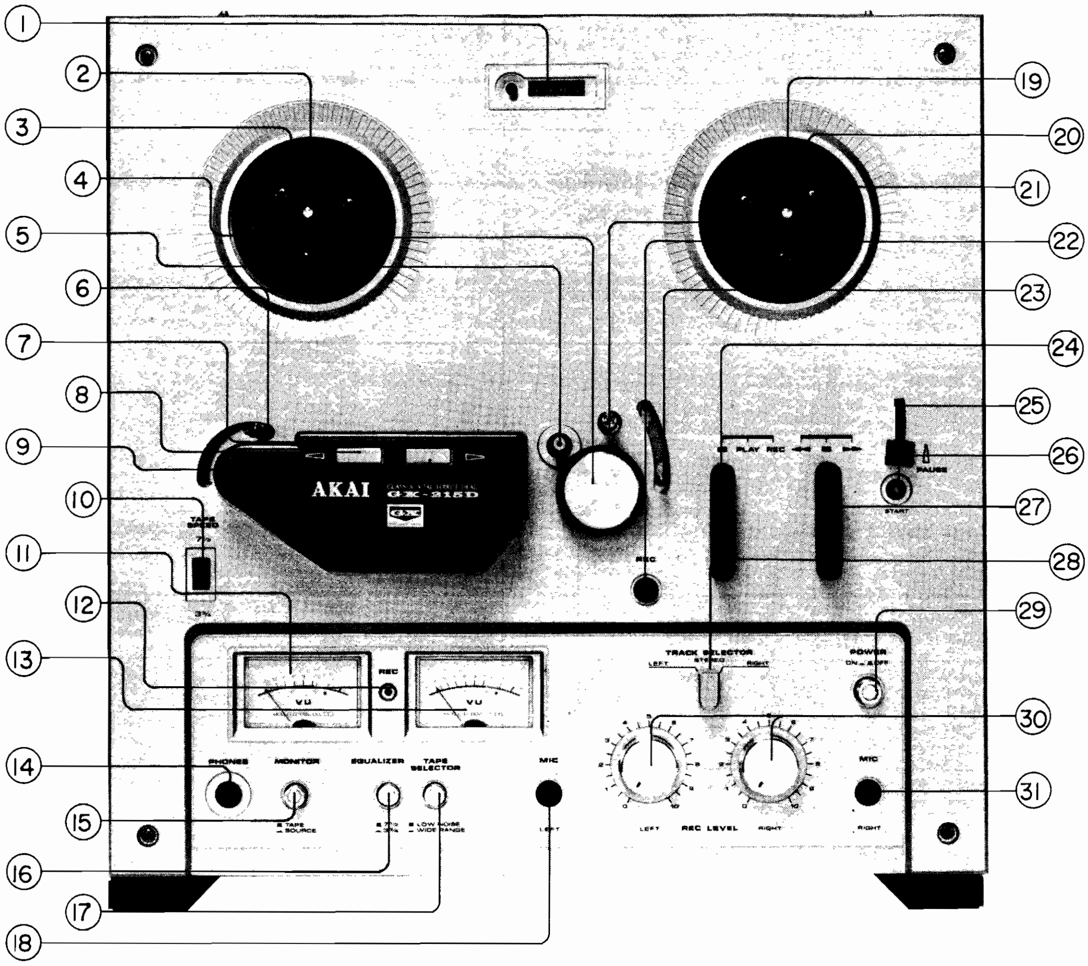


Fig. 1 Controls

1. INDEX COUNTER AND RESET BUTTON
2. REEL RETAINER (Left)
3. SUPPLY REEL TABLE
4. PINCH ROLLER
5. CAPSTAN
6. TENSION ARM (Automatic reverse sensing pole)
7. HEAD COVER
8. MANUAL REVERSE BUTTON (Reverse direction)
9. MANUAL REVERSE BUTTON (Forward direction)
10. TAPE SPEED SELECTOR
11. VU METER (Left)
12. RECORDING INDICATOR LAMP
13. VU METER (Right)
14. HEADPHONE JACK
15. MONITOR SWITCH
16. EQUALIZER SWITCH
17. TAPE SELECTOR SWITCH
18. MICROPHONE JACK (Left)
19. REEL RETAINER (Right)
20. TAKE-UP REEL TABLE
21. TAPE GUIDE
22. RECORDING BUTTON
23. AUTOMATIC STOP/TENSION LEVER
24. PLAY/RECORD LEVER
25. PAUSE LEVER
26. START BUTTON
27. FAST FORWARD/REWIND LEVER
28. TRACK SELECTOR LEVER
29. POWER SWITCH
30. RECORDING LEVEL CONTROL (Left/Right)
31. MICROPHONE JACK (Right)

IV. PRINCIPAL PARTS LOCATION

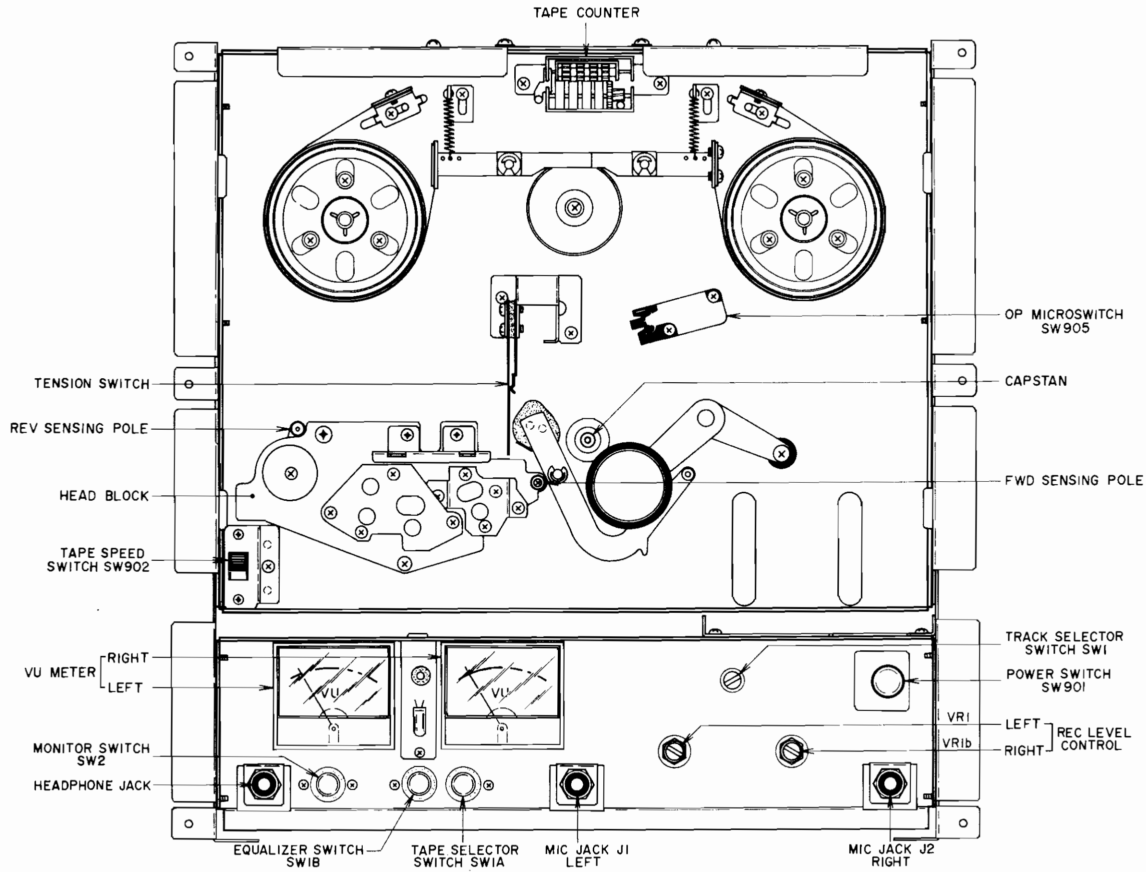


Fig. 2 Front View

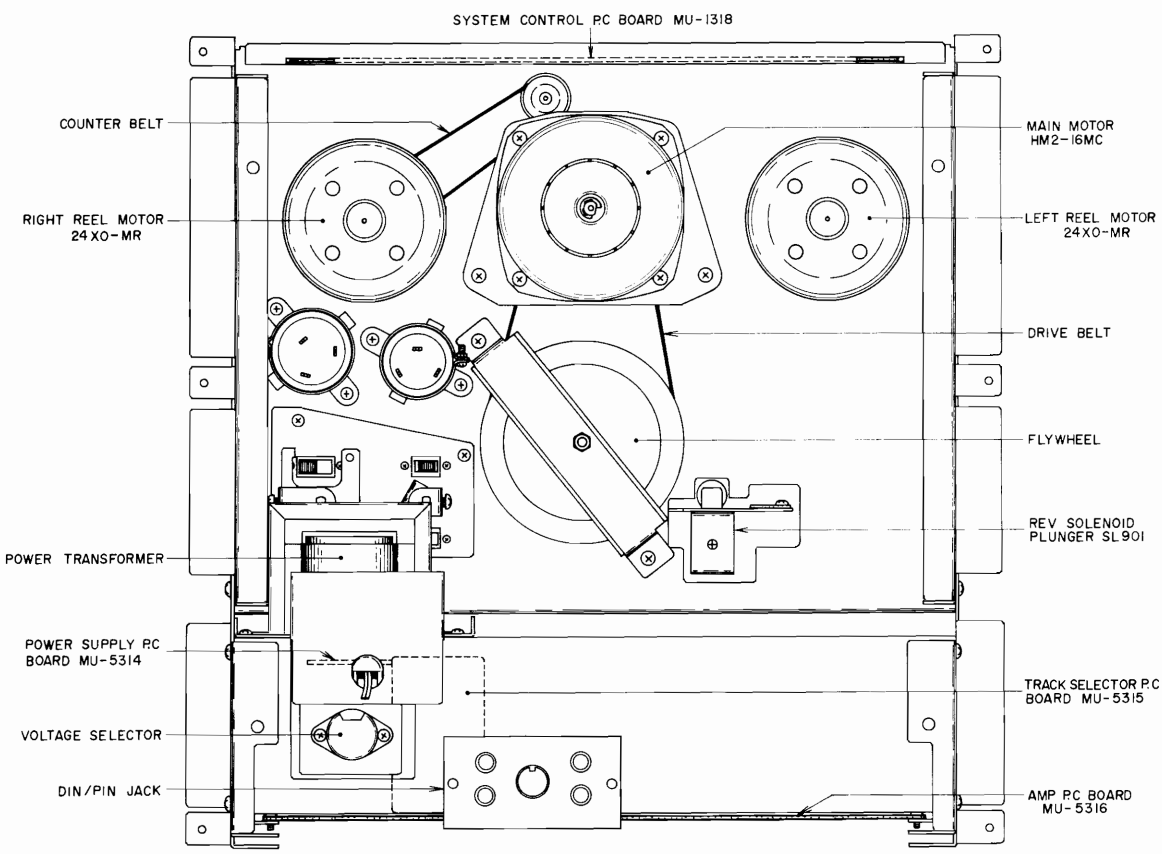


Fig. 3 Rear View

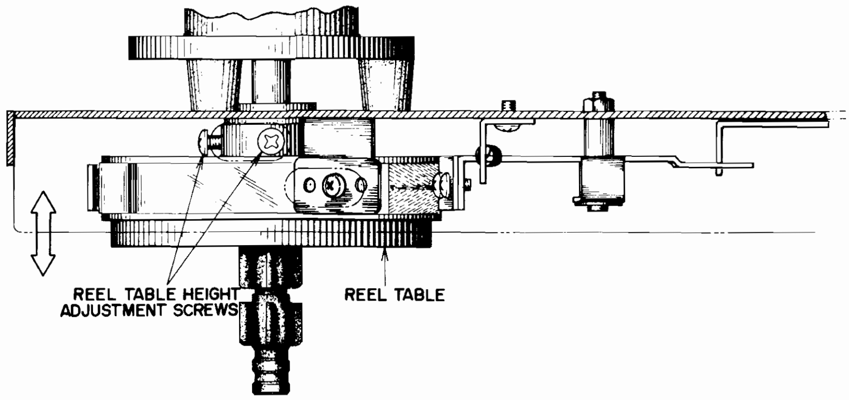


Fig. 4 Reel Table Height Adjustment

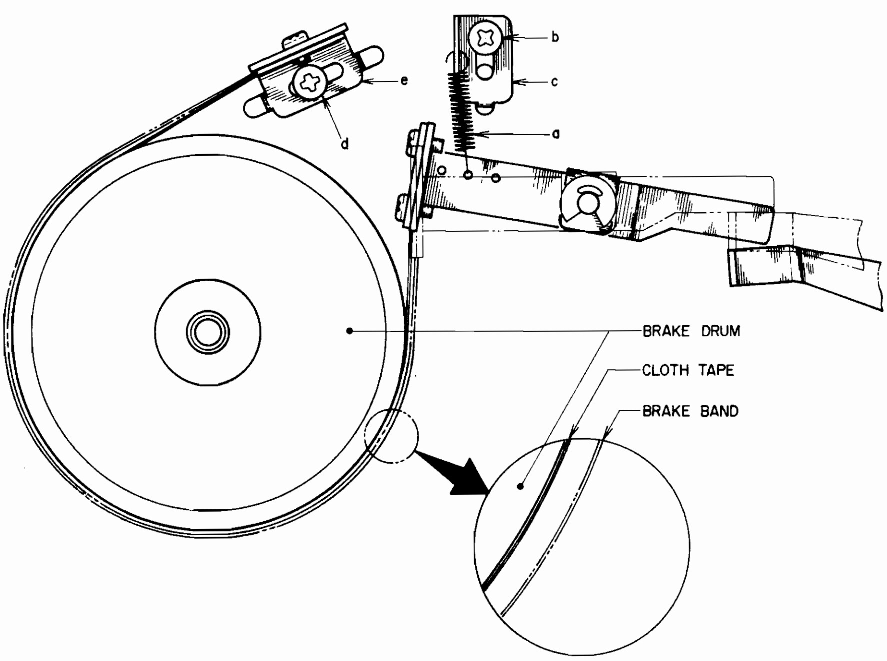


Fig. 5 Brake Tension Adjustment

1. REEL TABLE HEIGHT ADJUSTMENT

As shown in Fig. 4, loosen reel table height adjustment screws, and adjust reel table height by moving table in direction of arrow and positioning so that the tape winds in the center of the reel.

2. BRAKE TENSION ADJUSTMENT

Brake tension adjustment can be made as follows: (Refer to Fig. 5)

1) Change position of suspended spring (a) by hooking the lower end to either the left or the right hole.
2) Loosen screw (b) and adjust the vertical position of spring suspension metal (c).
3) Loosen screw (d) and adjust the horizontal position of brake band suspension metal (e).
4) Only the left side is shown in Fig. 5, but the right side must be adjusted in the same way.

NOTE: In making brake tension adjustments, at all modes except stop mode, confirm that the brake band completely separates from the cloth tape on the brake drum. (Refer to Fig. 5.)

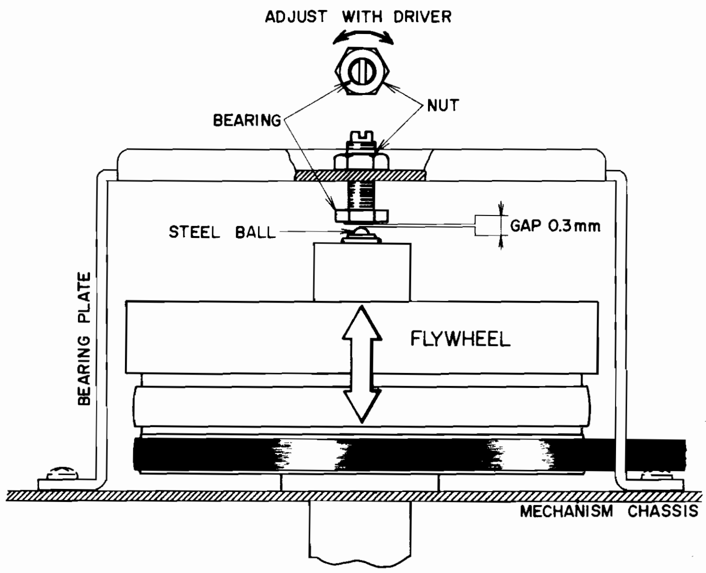


Fig. 6 Flywheel Loose Play Adjustment

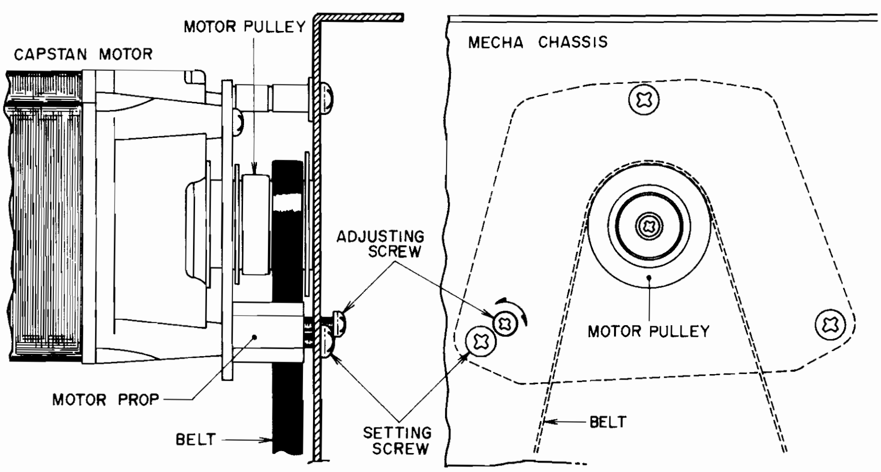


Fig. 7 Flywheel Belt Position Adjustment

3. LEFT AND RIGHT REEL MOTOR TENSION AT VARIOUS OPERATING MODES

Mode \ Reel Motor	Left Reel Motor	Right Reel Motor
FWD PB	60g	180g
REV PB	180g	60g
F.FWD	10g	400g
RWD	400g	10g

Chart 1

4. FLYWHEEL LOOSE PLAY ADJUSTMENT

Turn the adjustment screw to obtain a 0.3 mm gap between the steel ball and bearing when the flywheel is moved in the direction of the arrow as shown in Fig. 6.

5. FLYWHEEL BELT POSITION ADJUSTMENT

1) With capstan motor revolutions operating at Rev. mode, loosen setting screw and turn flywheel belt position adjustment screw until the flywheel belt comes to the center of the motor pulley. (Refer to Fig. 7.)
2) Tighten setting screw to maintain center positioning of flywheel belt at Rev. mode.
3) Confirm that the flywheel belt runs on the center of the motor pulley at Fwd. mode also.

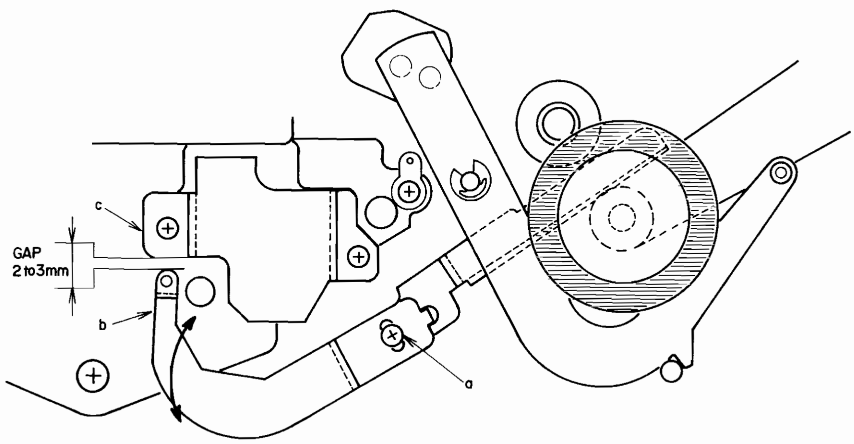


Fig. 8 Shifter Lever Adjustment

6. SHIFTER LEVER ADJUSTMENT

Loosen screw (a) and adjust by moving shifter lever (b) so that at play mode the gap between shifter lever (b) and angle plate (c) is 2~3 mm.

VI. HEAD ADJUSTMENT

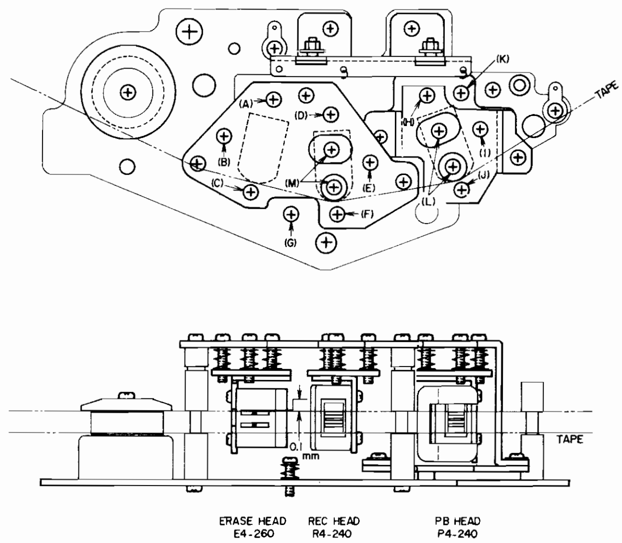


Fig. 9 Head Adjustment

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Erase Head Height Adjustment	Optional	Play	(A) (B) (C)	Upper edge of Ch1 head core is 0.1 mm higher than upper edge of the tape.
2	Recording Head Height Adjustment	Optional	Play	(D) (E) (F)	Upper edge of Ch1 head core is the same height as the upper edge of the tape.
3	Playback Head Height Adjustment (FWD)	Optional	Fwd Play	(G)	Same as Step 2.
4	Playback Head Height Adjustment (REV)	Optional	Rev Play	(K)	Lower edge of Ch2 head core is the same height as the lower edge of the tape.
5	Playback Head Azimuth Alignment	8,000 Hz 9.5 cm/sec test tape	Fwd Play	(H) (I) (J)	Maximum output, both channels.
6	Playback Head Gap Alignment	8,000 Hz 9.5 cm/sec test tape	Fwd Play	(L)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
7	Recording Head Azimuth Alignment	Scotch #211 tape, 15,000 Hz −20 VU recording	Rec	(E)	Same as Step 5.
8	Recording Head Gap Alignment	Scotch #211 tape, 15,000 Hz −20 VU recording	Rec	(M)	Same as Step 6.

Chart 2

NOTE:
1. Set Tape Speed to 7-1/2 ips (19 cm/sec).
2. Regarding Step 3, when replacing a head or for slight head adjustment, do not move screw (G). Adjust with screws (D) (E) and (F) and then make the next Step 4 adjustment.

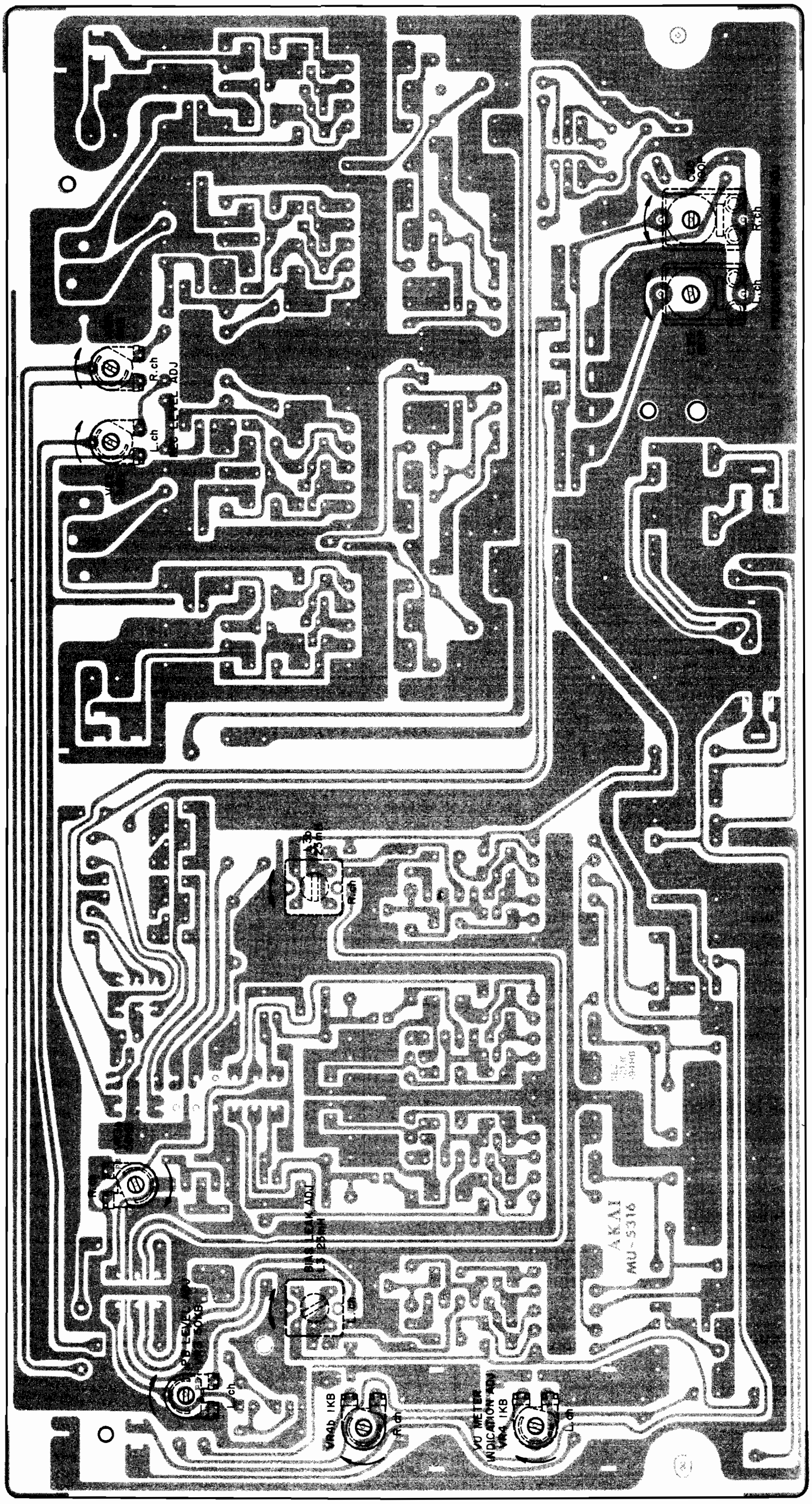


Fig. 10 Amp P.C Board MU-5316

Recording and Playback Amplifier Adjustment

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	Playback Level	700 Hz 7-1/2 ips Test Tape	FWD PLAY	VR3 50 kB (MU-5316)	0 dBm ±0.5 dB	±1.0 dB in relation to 0 dBm at RVS mode.
2	VU Meter Sensitivity	700 Hz 7-1/2 ips Test Tape	FWD PLAY	VR4 1 kB (MU-5316)	"0" VU indication	
3	Recording Level	SCOTCH #176 tape 1,000 Hz "0" VU recording	REC and PLAY	REC Volume VR1 50 kB	0 dBm ±0.5 dB	Monitor Switch to TAPE position and Tape Selector to LOW NOISE position.
		SCOTCH #176 tape 1,000 Hz "0" VU recording	REC and PLAY	VR2 5 kB (MU-5316)	0 dBm ±0.5 dB	Monitor Switch to SOURCE position and Tape Selector to LOW NOISE position.
4	Frequency Response	SCOTCH #176 tape 1,000 Hz, 10,000 Hz −20 dBm recording	REC and PLAY	C29 (Left) C30 (Right) (MU-5316)	Adjust to +1 dB at 10,000 Hz in relation to 1,000 Hz	Tape Selector to LOW NOISE position and Tape Speed to 3-3/4 ips.
5	Bias Leak		REC	L3 34 mH (MU-5316)	Less than −30 dB	With Monitor Switch to TAPE and SOURCE positions.

Chart 3

VIII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	HM2-16MC	Between PNK-RED 130 ohms Between PNK-BRN 180 ohms Between GRN-GRY 360 ohms Between GRN-YLW 370 ohms
Reel Motor	24X0-MR	Between BLU-RED 47 ohms Between YLW-GRN 166 ohms
Reverse Solenoid Plunger	840FHT1 48V 220 ohms	220 ohms ±15%
Relay	MY4-02-US DC24	660 ohms
Reed Relay	L-24	1,600 ohms
Headphone Output Transformer	N19-349S	Primary: 160 ohms ±15% Secondary: 0.64 ohms ±15%
Oscillator Coil	OT-204	Between 1–3 0.3 ohms Between 4–6 0.7 ohms Between 7–9 8.2 ohms
Erase Head	E4-260	3.5 ohms
Recording Head	R4-240	6.2 ohms
Playback Head	P4-240	220 ohms

Chart 4

NOTE: Resistance values shown in this chart are average values.

IX. CLASSIFICATIONS OF VARIOUS P.C BOARDS

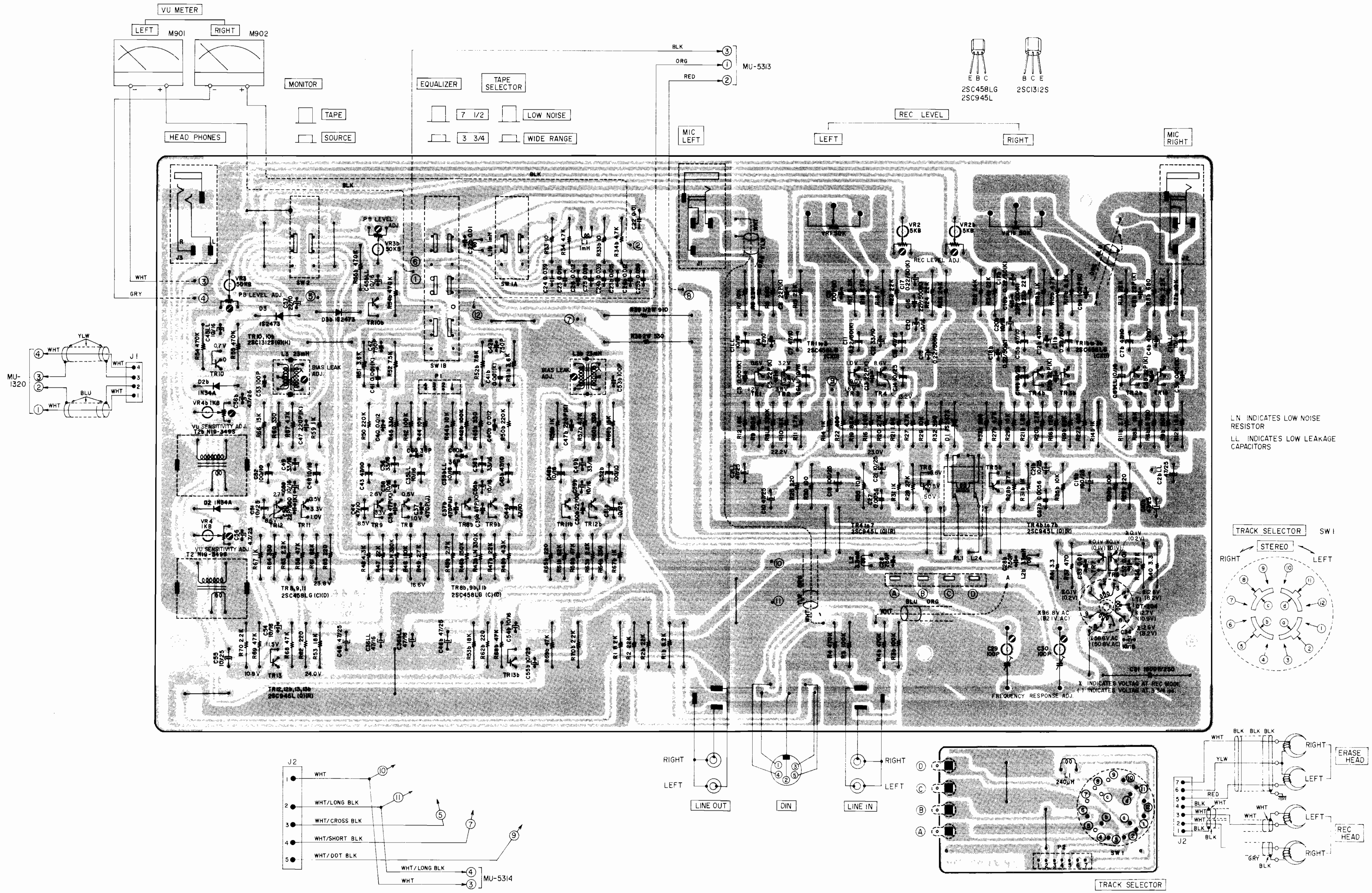
1. RELATION OF P.C BOARD TITLE AND IDENTIFICATION NUMBER

P.C Board	Number of P.C Board
Amp P.C Board	MU-5316
System Control P.C Board	MU-1318
Power Supply P.C Board	MU-5314
Track Selector P.C Board	MU-5315
Lamp P.C Board	MU-5313
Switch P.C Board	MU-1319
Head Switch P.C Board	MU-1320

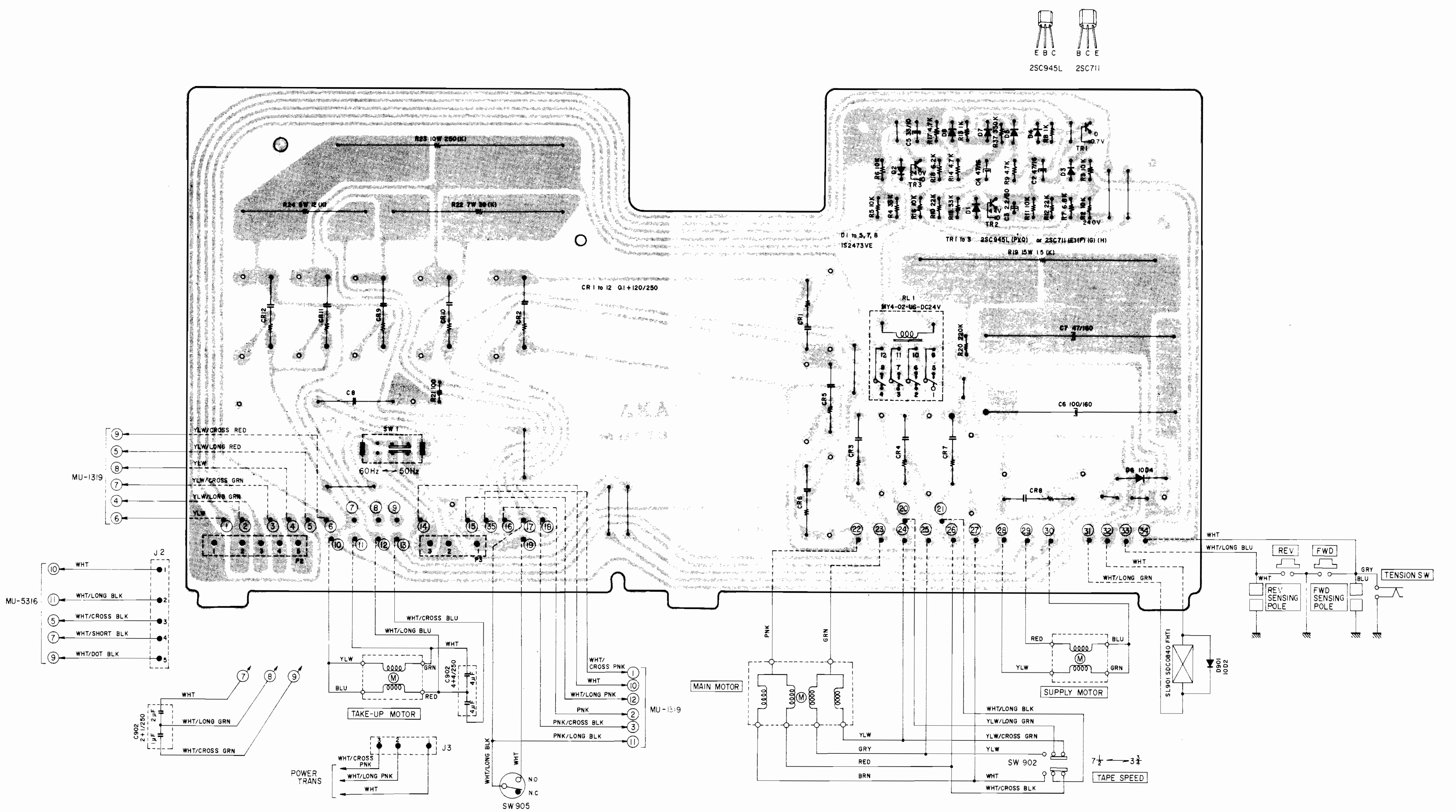
Chart 5

2. COMPOSITION OF VARIOUS P.C BOARDS

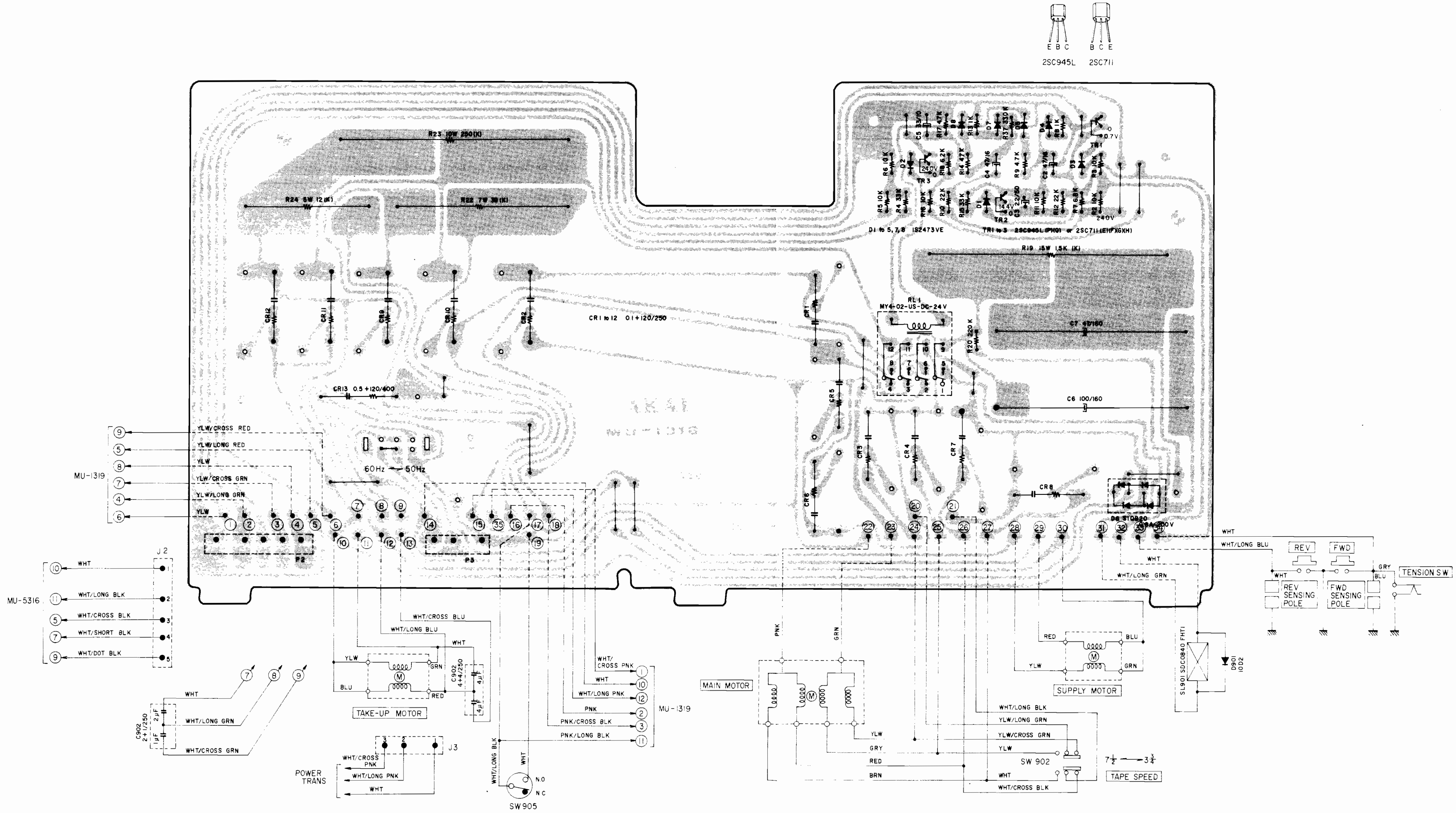
1) AMP. P.C BOARD MU-5316 & TRACK SELECTOR P.C BOARD MU-5315



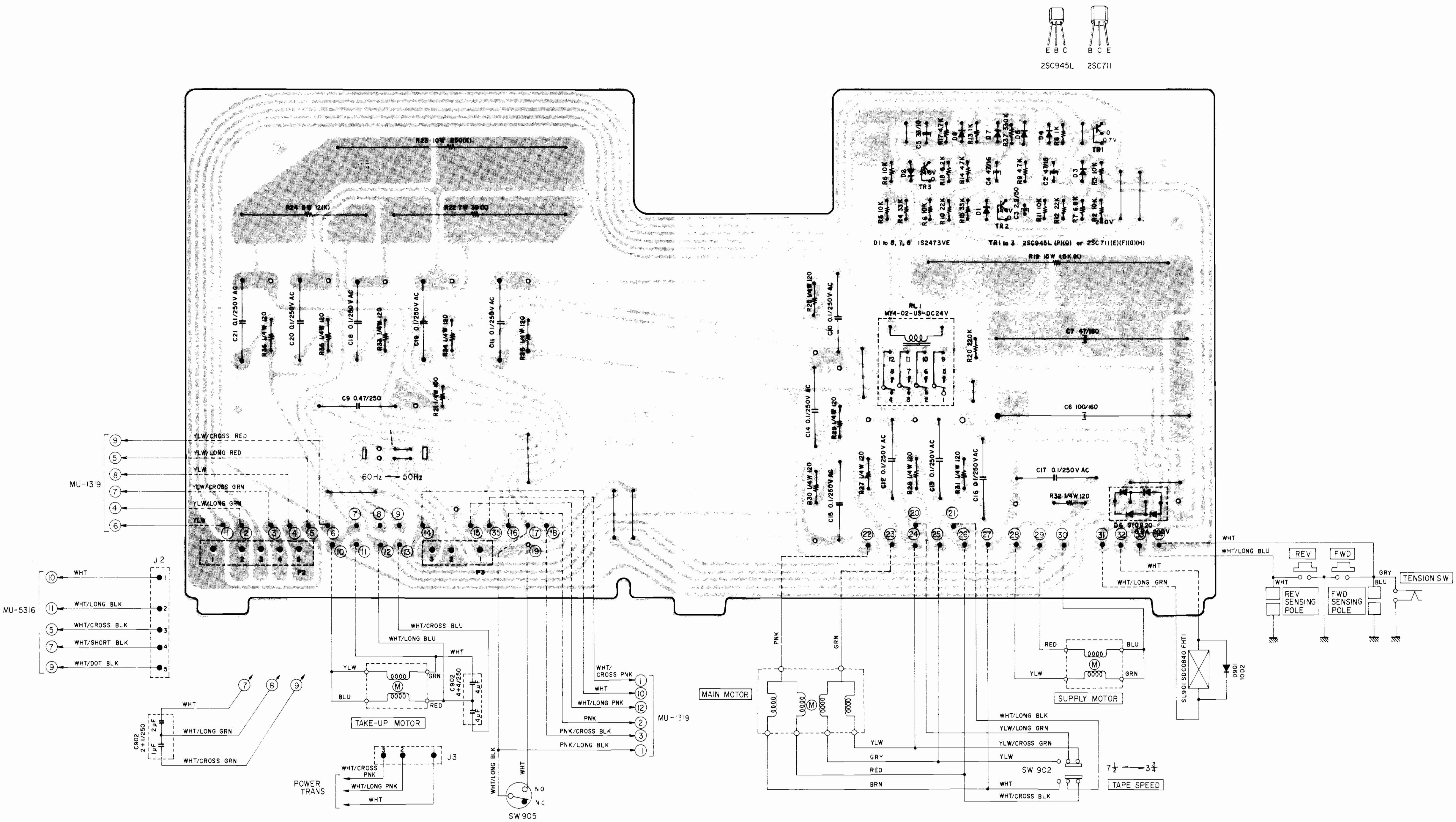
2) SYSTEM CONTROL P.C BOARD MU-1318 (U/T)



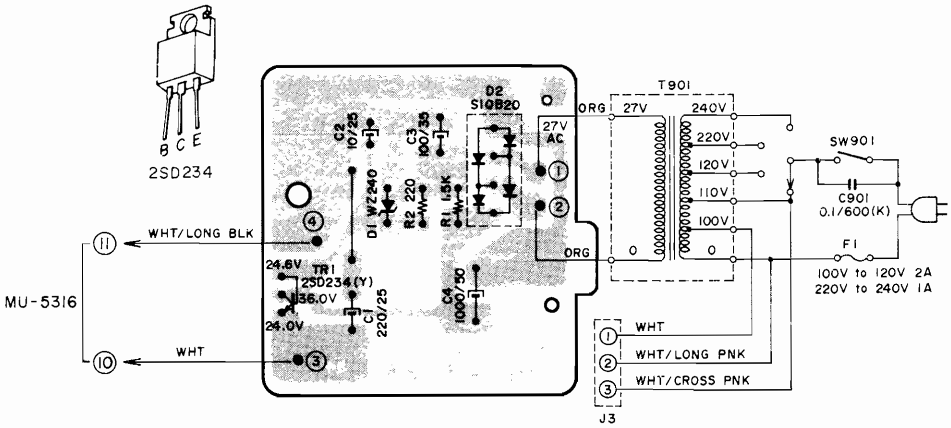
3) SYSTEM CONTROL P.C BOARD MU-1318 (CSA)



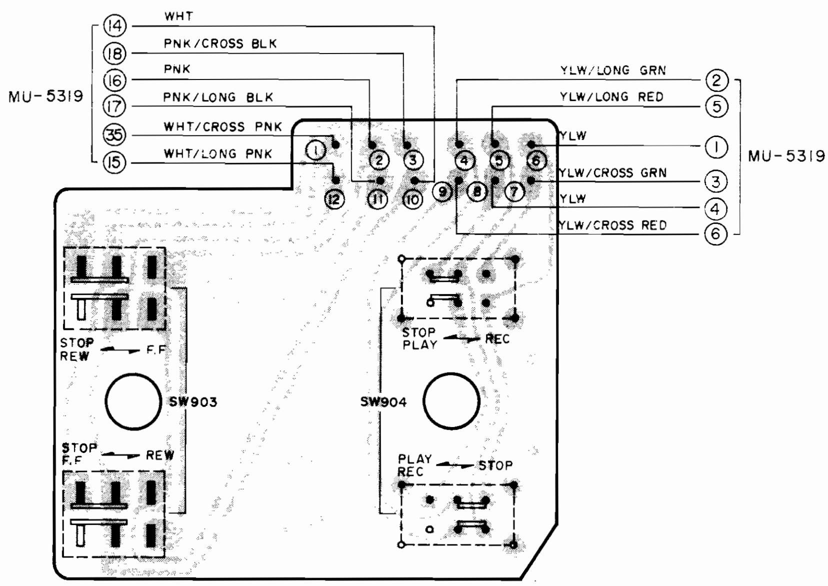
4) SYSTEM CONTROL P.C BOARD MU-1318 (CEE)



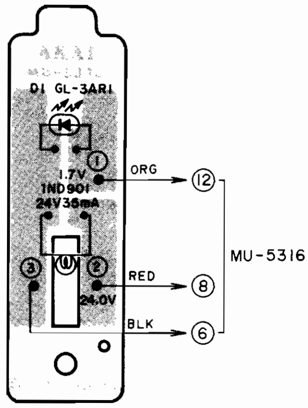
5) POWER SUPPLY P.C BOARD MU-5314



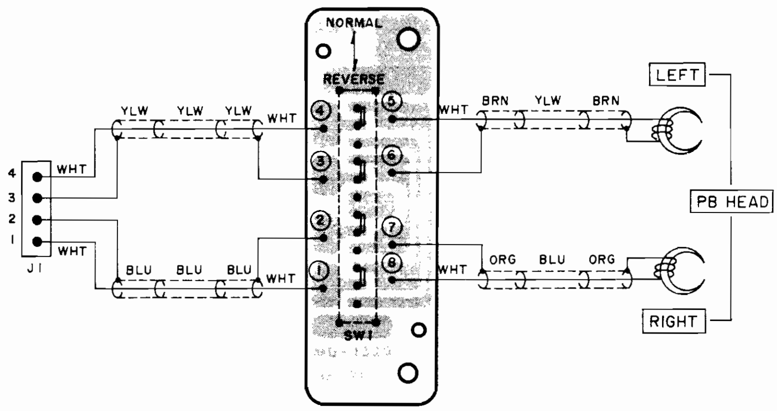
6) SWITCH P.C BOARD MU-1319



7) LAMP P.C BOARD MU-5313



8) HEAD SWITCH P.C BOARD MU-1320



SECTION 2

PARTS LIST

TABLE OF CONTENTS

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List

- The reference number corresponds with illustration or photo number of that particular parts list.
- This number corresponds with the Figure Number.
- This number corresponds with the individual parts index number in that figure.
- A small "x" indicates the inability to show that particular part in the Photo or Illustration.

12-115x

- Schematic Diagram Number of individual manufactured part. (not required for parts order)
- Quantity of particular part required.

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		FLYWHEEL BLOCK #13		
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:
1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

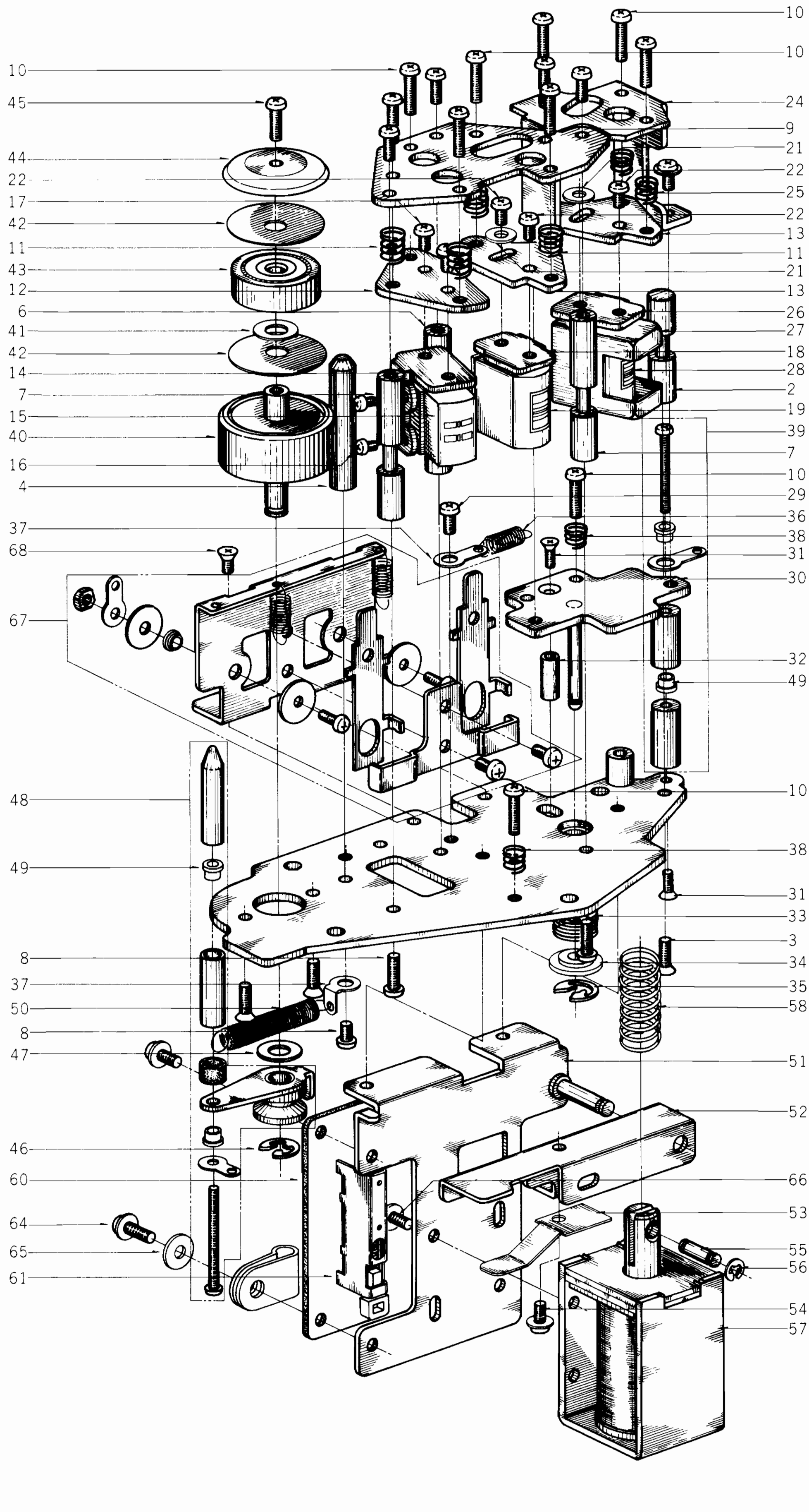
1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA272002	Syscon P.C Board Comp. MU-1318	U/T
BA272013	Syscon P.C Board Comp. MU-1318	CEE
BA272024	Syscon P.C Board Comp. MU-1318	CSA
BA272092	Track Selector P.C Board Comp. MU-5315	
BA272182	Power Supply P.C Board Comp. MU-5314	
BA302435	Amp P.C Board Comp. MU-5316	U/T
BA302436	Amp P.C Board Comp. MU-5316	CEE
BA302437	Amp P.C Board Comp. MU-5316	CSA
BC249164	Case Block Comp. MU-6308	
BF271934	Flywheel Block Comp.	
BM271912	Motor (HM2-16MC) Block Comp.	
BS271923	SW. Block Comp.	
BT249388	Power Trans. MUT-5	U/T
BT249401	Power Trans. MUT-7	CEE
BT249390	Power Trans. MUT-6	CSA
BR271945	Reel Table (L) Block Comp.	
BR271956	Reel Table (R) Block Comp.	
EA258287	Lamp P.C Board MU-5313	
EA264936	Head Switch P.C Board MU-1320	
EA300256	Switch P.C Board MU-1319	
EC207898	Trimmer/C. TM-110 100 PF	C29, 30 (MU-5316)
ED219464	Germanium Diode 1N34A	D2 (MU-5316)
ED224548	Silicon Diode 10D2	D901
ED224550	Silicon Diode 10D4	D6 (MU-1318)
ED249377	LED GL-3AR1	D1 (MU-5313)
ED249581	Silicon Diode S1QB20 0.8A 200V	D2 (MU-5314)
ED511918	Zener Diode WZ-240	D1 (MU-5314)
ED560913	Silicon Diode 1S2473VE	D1 to 5, 7, 8 (MU-1318)
ED624903	Silicon Diode 1S2473	D1, 3 (MU-5316)
EL619064	Lamp (L/T) 24V 35mA	IND901
EM666450	VU Meter D18A68R	M901, 902
EO383365	OSC Coil OT-204	T1 (MU-5316)
EP249344	Reed Relay L24	RL1 (MU-5316)
EP249647	Plunger Solenoid SDC0840FHT1	SL901
EP638763	Relay MY4-O-US DC24V	L1 (MU-1318)
ES224436	Push SW. JP01	U/T, CSA
ES242346	Push SW. JP17	CEE
ES249254	Push SW. SUE-12	SW1 (MU-5316)
ES249276	Push SW. SUE-24	SW2 (MU-5316)

Parts No.	Description	Note
ES258232	Slide SW. S-2930	SW1 (MU-1318)
ES258467	Slide SW. SSB-022	SW904
ES479485	Slide SW. S-1	SW903
ES494302	Slide SW. CL104B	SW1 (MU-1320)
ES562465	Micro SW. K-1	SW905
ET242390	Transistor 2SD234 (Y)	TR1 (MU-5314)
ET391768	Transistor 2SC458LG (C) (D)	TR1 to 3, 8, 9, 11 (MU-5316)
ET603257	Transistor 2SC1312S (G) (H)	TR10 (MU-5316)
ET635837	Transistor 2SC945L (Q) (R)	TR4 to 7, 12, 13 (MU-5316)
ET639437	Transistor 2SC945L (P) (Q)	TR1 to 3 (MU-1318)
EV249243	Vol. V24L52PHN60R 15A 50K	VR1 (MU-5316)
HE563220	ERASE HEAD E4-260	
HP271978	PB HEAD P4-240	
HR271980	REC HEAD R4-240	
MB247904	Counter Belt MU-1302	
MB541012	Drive Belt (Flat) MC-1209	Same as GX-210D
MC259312	Counter	
MP271170	Pinch Roller LC-321	Same as GX-210D
SK249096	Mecha Knob MU-6303	
SK259345	Pause Knob (C) MR-612	Same as GX-210D
SK264892	Selector Knob B CI-6020	
SK631056	Single Knob MY-6208	
SK634410	Push Button Knob J 91-5051	Same as GXC-760D
SK694888	Knob 3 CP-5019	
SP247408	Front Panel MU-6307	

2. ILLUSTRATION OF HEAD BLOCK

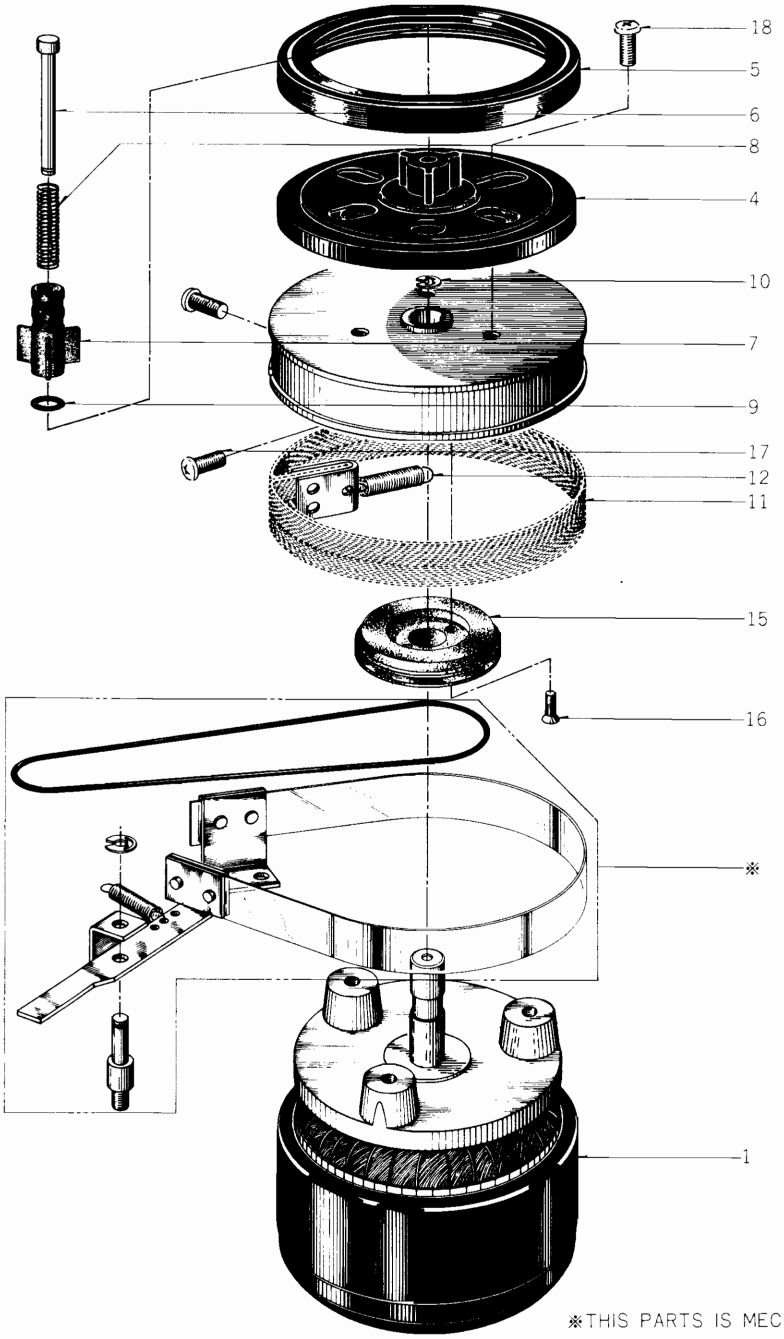


2) HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
2-1x	BH271967	Head Block Comp.		1
2-2	HZ317597	Tape Guide A, MR-4	MR-4	1
2-3	ZS414033	Screw, countersunk head 3x8		3
2-4	MH247757	Head Cover Prop	MU-0302	1
2-5x	ZS369900	Screw, pan head 3x8, w/washer		1
2-6	MH544195	Head Table Prop	MU-0002	1
2-7	HZ544206	Tape Guide	MU-0003	2
2-8	ZS421806	Screw, pan head 3x8		3
2-9	HZ248321	Head Hanger Plate	MU-0305	1
2-10	ZS380046	Screw, pan head 3x10		11
2-11	ZG540584	Angle Adjust Spring G	TW-0025	6
2-12	HZ261865	EH Mt. Base	MU-0341	1
2-13	HZ248308	Head Mt. Plate	MU-0307	2
2-14	ML248365	EH Angle	MU-0304	1
2-15	HE563220	ERASE HEAD E4-260		1
2-16	ZS201475	Screw, pan head 2x3		2
2-17	ZS608477	Screw, pan head 3x4		2
2-18	ML248310	RH Angle	MU-0306	1
2-19	HR271980	REC HEAD (R4-240) GX-215D(R)		1
2-20x	ZS477876	Screw, pan head 2x3		4
2-21	ZW265026	Washer D3.1x7x0.5t		2
2-22	ZS417216	Screw, pan head 3x4		4
2-23x	ZS379350	Screw, pan head 3x6		4
2-24	ML248275	Base Angle	MU-0309	1
2-25	ZG382757	Angle Adjust Spring D	RD-A12	3
2-26	ML248297	PH Angle	MU-0308	1
2-27	HZ248242	Head Shield	MU-0312	1
2-28	HP271978	PB HEAD (P4-240) GX-215D(P)		1
2-29	ZS422076	Screw, pan head 3x5		4
2-30	MZ300780	Angle Base Part GX-215D	MU-0310	1
2-31	ZS554938	Screw, countersunk head 2.3x6		2
2-32	MS296076	Hold-down Base Guide	MU-0347	1
2-33	ZG317902	PH Spring	MR-13	1
2-34	ZW317913	Spring Holder	MR-12	1
2-35	ZW290283	'U' Ring 2.85M	6-1-1	1
2-36	ZG247151	PW Arm Spring B	CA-0021	1
2-37	ZW562476	Earth Lug M3		3
2-38	ZG382757	Angle Adjust Spring D	RD-A12	2
2-39	MZ297810	Sensing Pole Assy MU-3	MC-0003	1
2-40	MS297821	Roller Guide Assy MU-3	MC-0001	1
2-41	ZW326463	Washer (PBP) D5.1x10.3x0.2t		1
2-42	ZW231805	Tape Guide Washer (Large)	3A-356	2
2-43	MV447491	Bearing SSR-1950ZZD52		1
2-44	MZ247961	Retaining Ring Case	MU-0317	1
2-45	ZS421740	Screw, pan head 3x8		1
2-46	ZW270123	'E' Ring 4M	6-1-9	1
2-47	ZW259885	Washer (PBP) D5.1x10.3x0.1t		2
2-48	MS297832	Sensing Guide Assy MU-3	MC-0002	1
2-49	HZ317632	Insulator Collar A	MR-36	2
2-50	ZG317114	Tension Lever Spring	MR-39	1
2-51	MZ280236	Plunger Base Part MU-3	MU-0313	1
2-52	ML247994	Lever, Head Base	MU-0315	1
2-53	MZ247972	SW. Retaining Plate	MU-0316	1
2-54	ZS608275	Screw, pan head 3x5, w/washer		1
2-55	ZS287021	Solenoid Pin (B)	MU-0346	1
2-56	ZW270088	'E' Ring 1.9M	6-1-9	2
2-57	EP249647	Plunger Solenoid SDC0840FHT1	44-1-84	1
2-58	ZG247948	Head Return Spring	MU-0319	1
2-59x	ED224548	Silicon Diode 10D2	45-2-14	1
2-60	EA264936	Head SW. P.C Board	MU-1320	1
2-61	ES494302	Slide SW. CL104B	25-3-79	1
2-62x	ZS558101	Screw, pan head 3x6, w/washer		2
2-63x	EZ663175	Cord Retainer RME71A	2-7-53	1
2-64	ZS608332	Screw, pan head 3x8, w/washer		2
2-65	ZW301256	Washer (PBP) D5.1x10.3x0.6t		1
2-66	ZS558101	Screw, pan head 3x6, w/washer		1
2-67	BL271991	DS Lever Block Comp. GX-215D	MU-1010	1
2-68	ZS327835	Screw, countersunk head 3x5		2
2-69x	ZS417137	Screw, binding head 3x4		1
2-70x	BZ302439	Micro Connector Assy		1

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

3. ILLUSTRATION OF REEL MOTOR/TABLE BLOCK



※THIS PARTS IS MECHANISM ASSEMBLY BLOCK

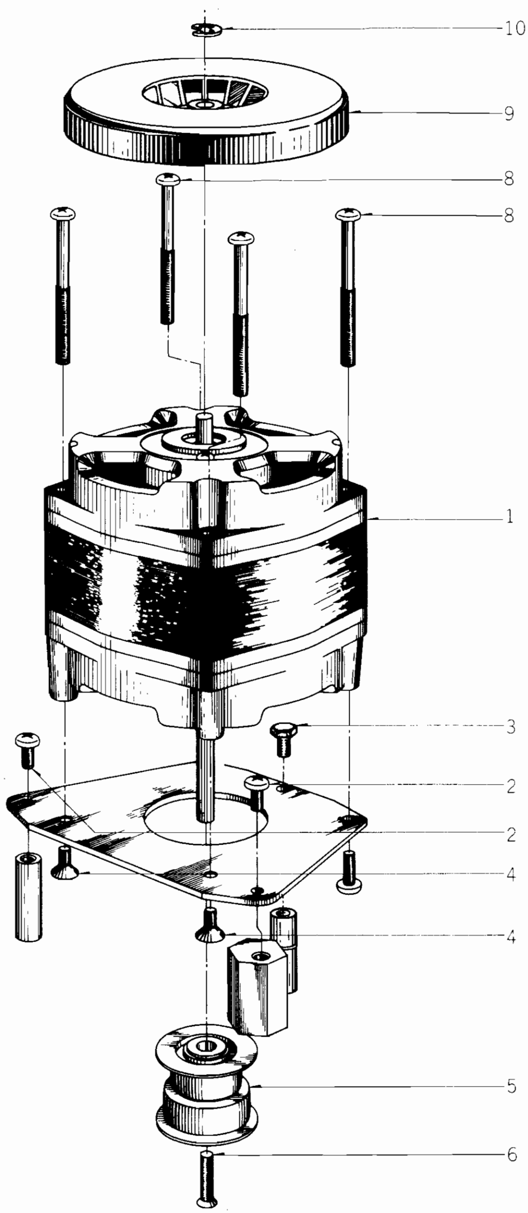
3) REEL MOTOR/TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1	BM314741	Motor Block Comp. 24XO-2 (Torque)		2
3-2x	BR271945	Reel Table (L) Block Comp.		1
3-3x	BR271956	Reel Table (R) Block Comp.		1
3-4	MT248523	Reel Table Disk	MU-1315	1
3-5	MT300426	Reel Table Rubber	MU-1322	1
3-6	MS342000	Reel Shaft	3R-108	1
3-7	MT255420	Reel Retainer	3R-102	1
3-8	ZG255633	Reel Spring	3R-109	1
3-9	MT516565	'O' Ring 2.8x1.9	3R-139	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-10	ZW270088	'E' Ring 1.9M	6-1-9	1
3-11	MT436860	Brake Cloth Comp. MR	MR-269	1
3-12	ZG317496	Felt Tension Spring	MR-260	1
3-13x	ZW562476	Earth Lug M3		1
3-14x	ZS417216	Screw, pan head 3x4		1
3-15	MR317507	Counter Pulley (R)	MR-217	1
3-16	ZS432663	Screw, countersunk head 2.3x6 (R)		2
3-17	ZS424056	Screw, pan head 4x10		2
3-18	ZS355511	Screw, binding head 3x6		6

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

4. ILLUSTRATION OF MAIN MOTOR BLOCK



4) MAIN MOTOR BLOCK

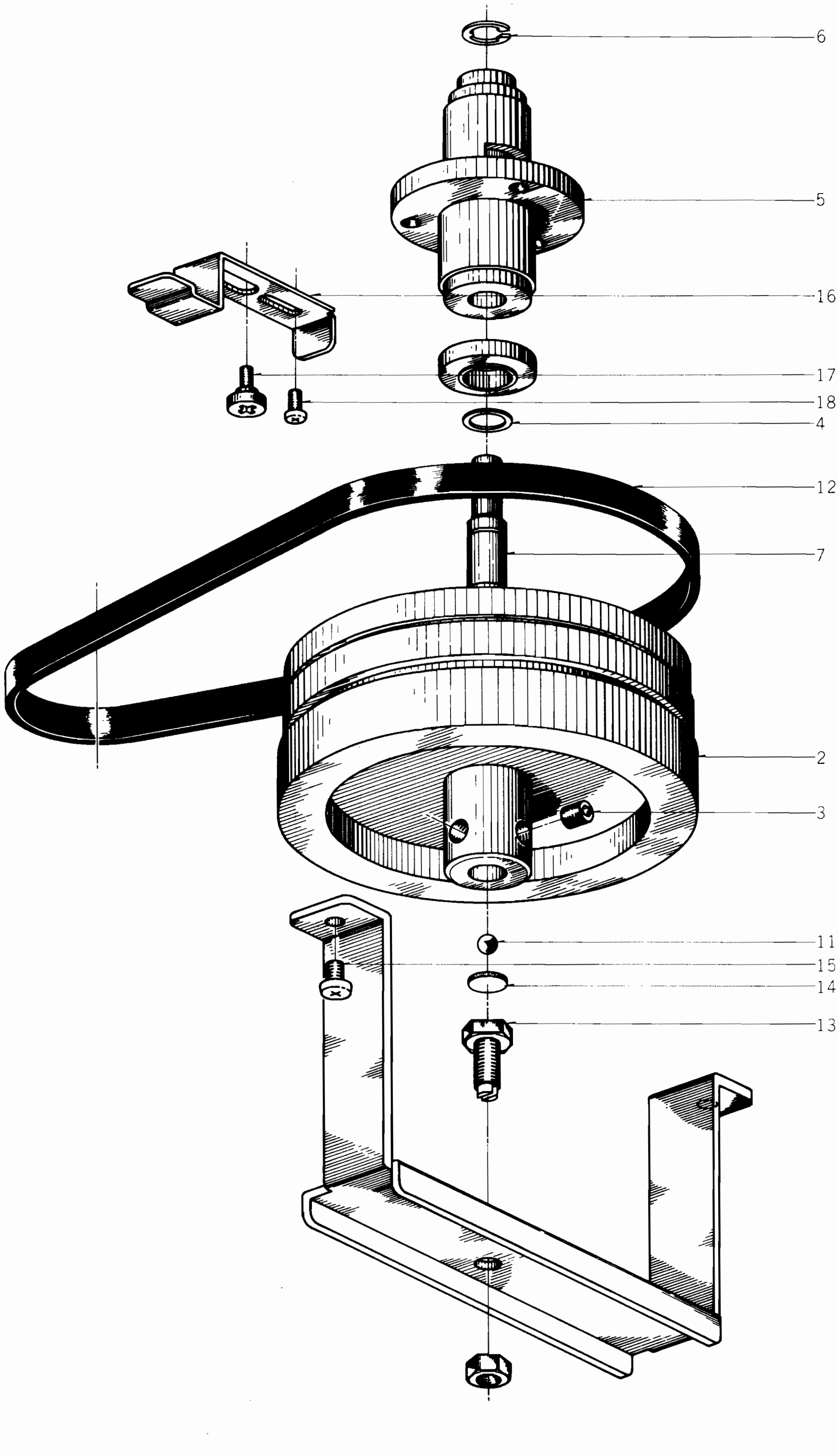
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
4-1	BM244675	Motor Block (HM2-16MC) Comp. MU		1
4-2	ZS424056	Screw, pan head 4x10		2
4-3	ZS272395	Motor Prop Retaining Screw, M-7	24X-732	1
4-4	ZS427026	Screw, countersunk head 4x10		2
4-5	MR673738	Motor Pulley Part ND	MC-7201	1
4-6	ZS413921	Screw, oval countersunk head 3x15		1
4-7x	ZW273914	Spring Washer		1
4-8	ZS427037	Screw, pan head 4x50, w/washer		4
4-9	MZ529108	Main Motor Fan	ND-7010	1
4-10	ZW270123	'E' Ring 4M	6-1-9	1

5) FLYWHEEL BLOCK

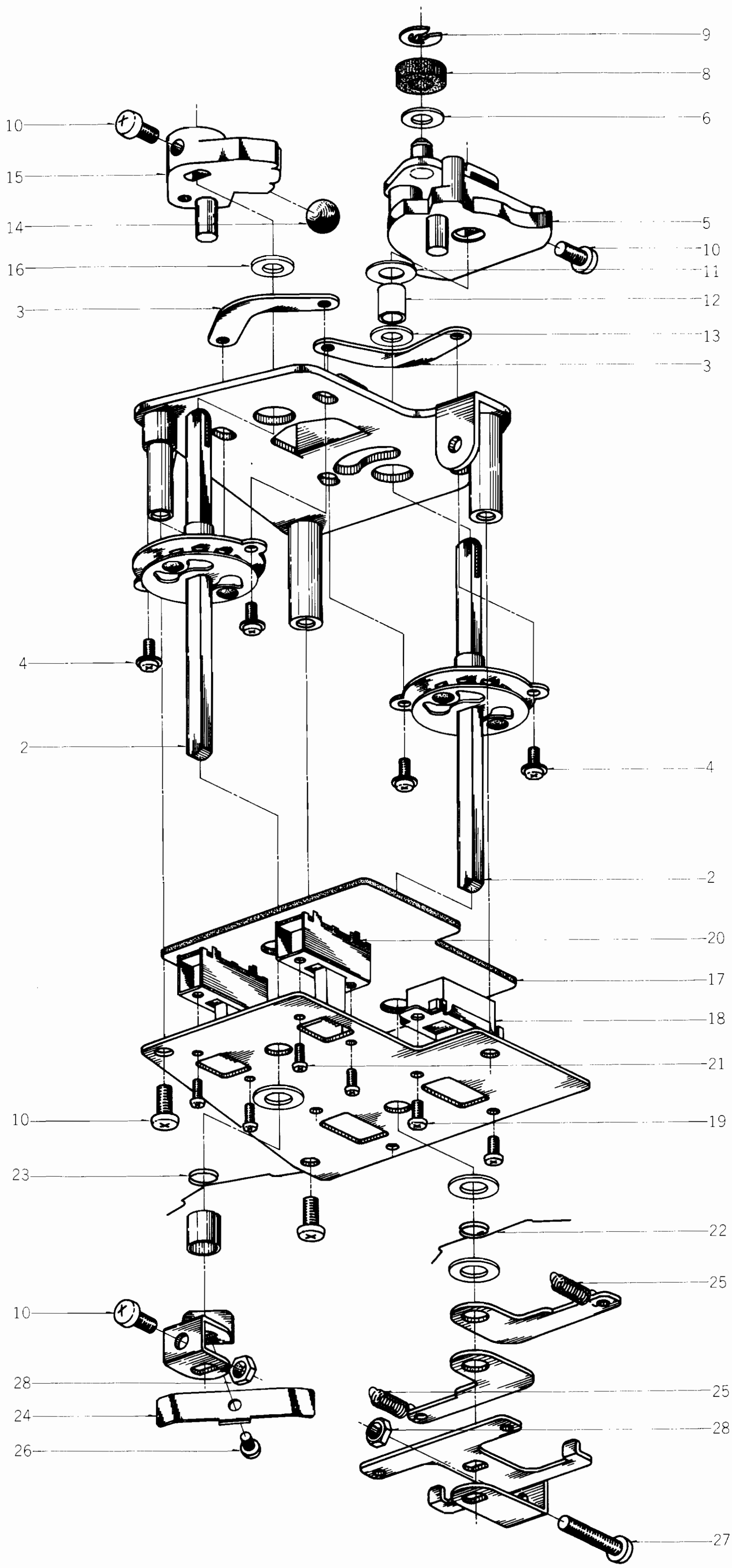
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
5-1x	BF271934	Flywheel Block Comp.		1
5-2	BF673683	Flywheel 24 Part LS		1
5-3	ZS373577	Set Screw, hexagon socket 5x6 (Flat/P.)		2
5-4	ZW447208	Flywheel Thrust B D7.9x13x0.5t	101025	1
5-5	MZ688318	Main Case Part MH	MH-206	1
5-6	MH244710	Flywheel Fixing Pin	900-250	1
5-7	MS476572	Main Shaft, D6	MR-2005	1
5-8x	ZS413201	Screw, pan head 4x8		1
5-9x	ZS427026	Screw, countersunk head 4x10		1
5-10x	ZS200485	Screw, countersunk head 4x10 D=8.5	MH-136	1
5-11	MV269965	Steel Ball D4		1
5-12	MB541012	Drive Belt (Flat) D116.9x1.6x7	MC-1209	1
5-13	MZ585900	Shaft Support	LS-1203	1
5-14	ZW392681	Washer (Nylon) D8x1t (without hole)		1
5-15	ZS413302	Screw, pan head 4x5		2
5-16	ML248545	Cycle Change Lever	MU-1316	1
5-17	ZS469710	MR Graduated Screw	MR-254	1
5-18	ZS323728	Screw, binding head 3x5		1

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

5. ILLUSTRATION OF FLYWHEEL BLOCK



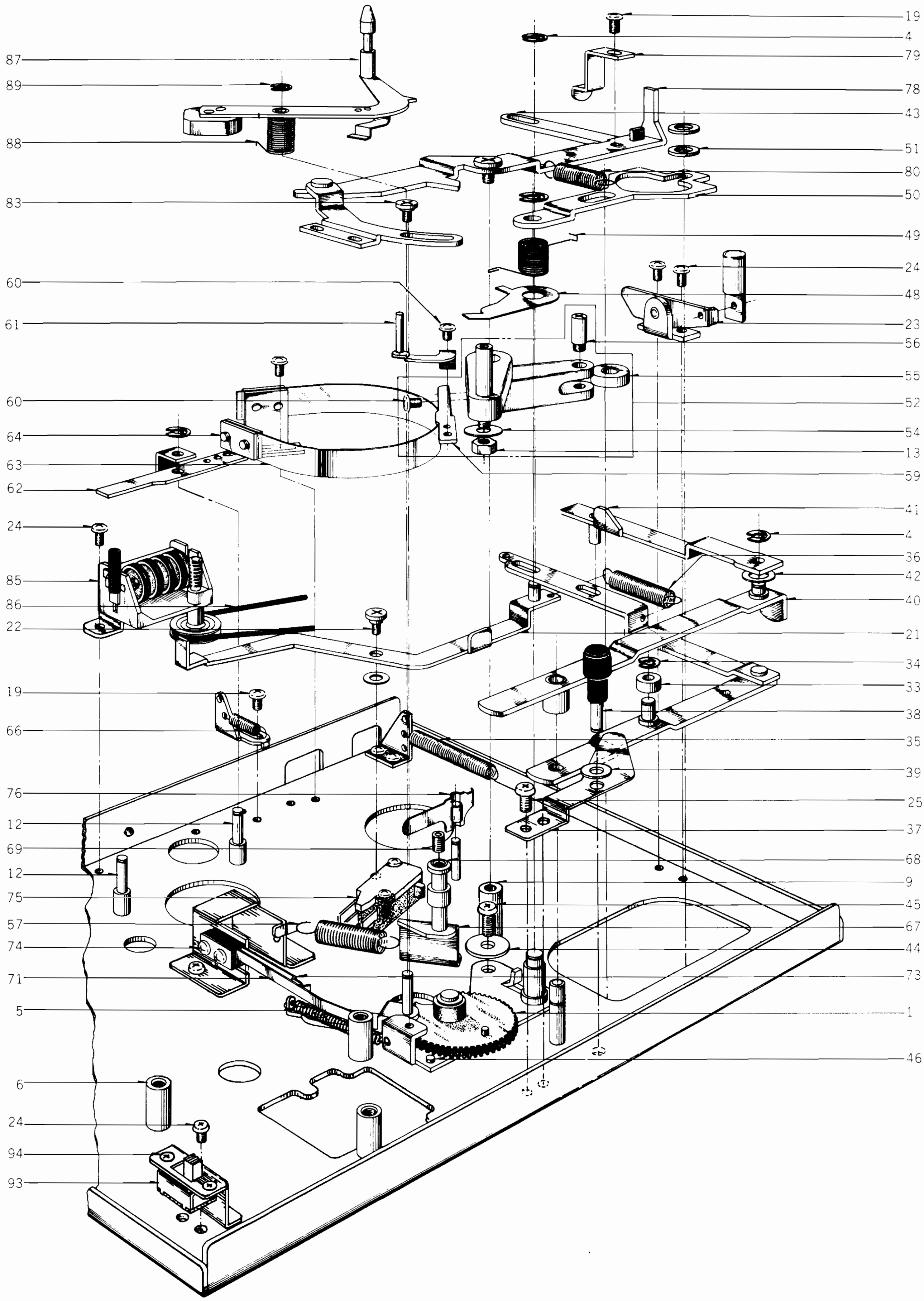
6. ILLUSTRATION OF SW. BLOCK



6) SW. BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
6-1x	BS271923	SW. Block Comp.		1
6-2	ES316934	Rewind Shaft (Y Type)	25-8-5	2
6-3	MZ316945	Nut Plate	MR-245	2
6-4	ZS558101	Screw, pan head 3x6, w/washer		4
6-5	MZ671872	Cam A-3 MR	MR-242	1
6-6	ZW259942	Washer (Fiber) D5.1x10.3x0.5t		1
6-7x	ZW260133	Washer (Fiber) D6.1x10x1t		2
6-8	MR269730	Cam Roller D12	900-213	1
6-9	ZW290283	'U' Ring 2.85M	6-1-1	1
6-10	ZS413201	Screw, pan head 4x8		5
6-11	ZW260201	Washer (Nylon) D6.2x13x1t		3
6-12	MZ258502	Spacer 6x8	7-2-6	1
6-13	ZW260087	Washer (Fiber) D6.1x10x0.5t		2
6-14	MV270066	Steel Ball D8		1
6-15	MZ217271	Cam B (Without Tap)	900-206	1
6-16	ZW376402	Washer (Fiber)D5.1x10.3x1t		2
6-17	EA300256	SW. P.C Board Part GX-215D	MU-1319	1
6-18	ES479485	Slide SW. S-1	25-3-66	2
6-19	ZS422076	Screw, pan head 3x5		4
6-20	ES258467	Slide SW. SSB-022	25-3-127	2
6-21	ZS479474	Screw, pan head 2.6x5		2
6-22	ZG248681	SW. Spring A	MU-2305	1
6-23	ZG248760	SW. Spring B	MU-2307	1
6-24	ZG248657	SW. Spring	MU-2304	1
6-25	ZG284398	Wind Spring	MU-2308	2
6-26	ZS432674	Screw, pan head 3x3		1
6-27	ZS554771	Screw, pan head 4x20		1
6-28	ZW413188	Nut M4, #1		2

7. ILLUSTRATION OF MECHA ASSEMBLY BLOCK



7) MECHA ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		ECCENTRIC GEAR BLOCK		
7-1	MZ248005	Eccentric Gear	4TR-245	1
7-2x	ZW861344	Washer (PBP) D6.1x10x0.4t		1
7-3x	ZW260144	Washer (Nylon) D6.1x10x0.3t		1
7-4	ZW290283	'U' Ring 2.85M	6-1-1	8
7-5	ZG437253	Eccentric Gear Return Spring	MS-2022	1
		ASSEMBLY BLOCK		
7-6	MH247533	Head Prop E	100012	3
7-7x	ZS413201	Screw, pan head 4x8		3
7-8x	ZS260346	Flat Screw	7-1-66	1
7-9	MS317362	Pinch Roller Arm Shaft	MR-125	1
7-10x	ZW274026	Spring Washer		1
7-11x	ZW413278	Nut M5, #1		1
7-12	MH247893	Brake Prop	MU-1303	2
7-13	ZW413188	Nut M4, #1		3
7-14x	ZW413267	Flange Nut M4		1
7-15x	ZW273688	Nut M2.3		1
7-16x	ZS260346	Flat Screw	7-1-66	2
7-17x	ZS447840	Tapping Screw #2 3x8 (BR)		6
7-18x	ZS325495	Tapping Screw #2 3x6 (BR)		2
7-19x	ZS323728	Screw, binding head 3x5		7
7-20x	ZS424056	Screw, pan head 4x10		6
7-21	ML679151	Brake Lever C Part MR	MR-227	1
7-22	ZS469710	MR Graduated Screw	MR-254	1
7-23	ML674357	Start Lever Part MS	4TR-122	1
7-24	ZS422076	Screw, pan head 3x5		11
7-25	ZS417150	Screw, pan head 4x6		3
7-26x	ZW330412	Adjust. Washer (U) D4x13x0.13t		1
7-27x	ZW330423	Adjust. Washer (U) D4x13x0.25t		1
7-28x	ZW603797	Adjust. Washer (U) D4x13x0.5t		1
7-29x	ZW413190	Adjust. Washer (U) D4x13x0.8t		1
7-30x	ZW330456	Adjust. Washer (U) D4x13x1t		1
7-31x	ZW439547	Adjust. Washer (U) D4x13x1.5t		1
7-32x	ZS424056	Screw, pan head 4x10		3
7-33	MR314785	Cam Roller D9	MR-237	1
7-34	ZW270101	'E' Ring 3M	6-1-9	1
7-35	ZG314818	D Lever Spring	MR-114	1
7-36	ZG314706	Spring IB	MR-115	1
7-37	MZ628211	REC. Stopper	LE-1602	1
7-38	SB625004	REC. Button (RED)	900-167	1
7-39	ZW259773	Washer (Nylon) D4.1x7x0.5t		1
7-40	ML673694	707 Lever A Part 707	LC-103	1
7-41	ML672028	MRC Lever Part MR	MR-108	1
7-42	ZW419826	Washer (Fiber) D6.2x10x1t		2
7-43	ML314864	IB Lever	MR-111	1
7-44	MZ692864	Gear Table Collar	MR-1004	1
7-45	ZS413201	Screw, pan head 4x8		1
7-46	ZS207314	Amp. Lever Set Screw	3A-737	1
7-47x	ZW259885	Washer (PBP) D5.1x10.3x0.1t		1
7-48	MZ218125	Gear Stopper	4TR-120	1
7-49	ZG226697	Stopper Spring	4TR-121	1
7-50	ML228868	Auto Mecha Control Lever	4TR-125	1
7-51	ZW260087	Washer (Fiber) D6.1x10x0.5t		1
7-52	ML293747	Pinch Roller Lever Comp. GX-215D		1
7-53x	ZW237868	Washer D5.1x10x1t		1
7-54	ZW675033	Washer (SPC) D5.1x10.3x0.8t		1
7-55	MR269763	Cam Roller D13	900-154	1
7-56	MS582906	Cam Roller Shaft A-1	7-3-6	1
7-57	ZG455692	Pinch Roller Spring, MS	MS-1015	1
7-58x	ZW314943	Washer (Nylon) D8	MR-113	1
7-59	ML248556	Shifter Lever B	MU-1317	1
7-60	ZS608275	Screw, pan head 3x5, w/washer		2
7-61	ML262798	Shifter Lever Part MU-3	MU-1308	1
7-62	ML314976	Brake Lever A	MR-210	1
7-63	MT314987	Brake Band	MR-213	1
7-64	ZS417216	Screw, pan head 3x4		4
7-65x	ML396810	Brake Lever B	KD-1038	1
7-66	ZG315011	Brake Lever Spring	MR-116	2
7-67	MZ672074	Reverse Guide Base Part MR	MR-229	1
7-68	HZ315090	Reverse Guide	RD-225	1
7-69	ZS609254	Set Screw, hexagon socket 4x6 (cup/p.)		1
7-70x	HZ225540	SW. Spacer B	3A-131	1
7-71	ES316361	Tension SW.	MR-235	1
7-72x	HZ225527	SW. Spacer	3A-130B	3
7-73	ES316372	Repeater SW.	3A-132	1
7-74	ZS421806	Screw, pan head 3x8		2
7-75	ES562465	Micro SW. K-1	25-1-26	1
7-76x	ML316394	Operation SW. Lever	MR-112	1
7-77	ZW270088	'E' Ring 1.9M	6-1-9	1
7-78	ML672030	MR Quick Lever Part MR	MR-233	1
7-79	MZ316451	Pause Stopper, M-7	MH-126	1
7-80	ZG301061	Pause Spring 990A	4TR-128	1
7-81	MH289168	Pause Lever Fastener	LE-1007	1
7-82x	ZW260010	Washer (PBP) D6.1x10x0.1t		1
7-83	ZS469710	MR Graduated Screw	MR-254	1
7-84x	ZW273802	Toothed Lock Washer		1
7-85	MC259312	Counter MU-3	9-1-52	1
7-86	MB247904	Counter Belt	MU-1302	1
7-87	BL316484	AS Lever Block Comp. MR, MS, MC		1
7-88	ZG300751	MU AS Lever Spring	MU-1323	1
7-89	ZW290294	'U' Ring 2.85M	6-1-1B	1
7-90x	EC249592	MP/C. 4+4 μF 250WV	24-9-116	1
7-91x	EC266411	MP/C. 2+1 μF 250WV (Wrapping Type)	24-9-119	1
7-92x	ZW376391	Washer (Polyslider) D6.1x10x0.13t		1
7-93	ES375478	Slide SW. ESD-279DU	25-3-23	1
7-94	ZS369145	Screw, countersunk head 3x5 D=5		2

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

8. P.C BOARDS

(1) AMP P.C BOARD (MU-5316) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Q'ty
(1)-1	BA302435	Amp P.C Board Comp. (MU-5316)		1
(1)-2	BA302436	Amp P.C Board Comp. (MU-5316) (CEE)		1
(1)-3	BA302437	Amp P.C Board Comp. (MU-5316) (CSA)		1
(1)-TR1to3	ET391768	Transistor 2SC458LG(C)(D)	45-1-29	6
(1)-TR4to7	ET398711	Transistor 2SC945L(Q)(R)	45-1-85	6
(1)-TR8,9	ET391768	Transistor 2SC458LG(C)(D)	45-1-29	4
(1)-TR10	ET603257	Transistor 2SC1312S(G)(H)	45-1-182	2
(1)-TR11	ET391768	Transistor 2SC458LG(C)(D)	45-1-29	2
(1)-TR12,13	ET398711	Transistor 2SC945L(Q)(R)	45-1-85	4
(1)-D1	ED624903	Silicon Diode 1S2473	45-3-28	1
(1)-D2	ED219464	Germanium Diode 1N34A	45-3-1	2
(1)-D3	ED624903	Silicon Diode 1S2473	45-3-28	2
(1)-J1,2	EJ249221	Mic. Jack MU	31-2-77	2
(1)-J3	EJ249232	Headphone Jack MU	31-2-77	1
(1)-VR1	EV249243	Vol. V24L52PHN60R 15A 50k	36-2-42	2
(1)-VR2	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	36-10-266	2
(1)-VR3	EV464220	Semi-fixed/Vol. V8K4-1 50 kB	36-10-266	2
(1)-VR4	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	36-10-266	2
(1)-SW1	ES249254	Push SW. MU	25-5-240	1
(1)-SW2	ES249276	Push SW. MU	25-5-241	1
(1)-RL1	EP249344	Reed Relay, L Type L24	47-2-28	1
(1)-T1	EO383365	OSC. Coil OT-204	23-4-20	1
(1)-T2	BT490702	Headphone Trans. N19-349S	38-2-32	2
(1)-L1	EO243977	Ferri Inductor FL7H 1 MH(J)	23-1-3	2
(1)-L2(L)	EO243988	Ferri Inductor FL7H 3.3 MH(J)	23-1-3	1
(1)-L2(R)	EO301467	Ferri Inductor RX-9P 3.3 MH(J)	23-1-275	1
(1)-L3	EO624857	Inductor GE6070A 23 MH	23-1-227	2
(1)-R30	ER564772	Fuse/R. FRN50 1/4 100 ohms(K) 200 mA (CEE, CSA)	35-14-9	2
(1)-R38	ER653545	Metal Oxide Film/R. 2W 330 ohms(K)	35-15-18	1
(1)-C9	EC208350	Styrol/C. 100PF(K) 50WV (Vert. Type)	24-11-11	2
(1)-C28	EC562678	Styrol/C. 750PF(J) 50WV (Vert. Type)	24-11-3	2
(1)-C29,30	EC207898	Trimmer/C. TM-110 100PF	24-2-37	2
(1)-C31	EC558235	Styrol/C. 1800PF(J) 250WV (Tub. Type)	24-11-10	1
(1)-C37	EC405898	Styrol/C. 470PF(J) 50WV (Vert. Type)	24-11-3	2
(1)-C42	EC562678	Styrol/C. 750PF(J) 50WV (Vert. Type)	24-11-3	2
(1)-C44	EC262743	Tantalum/C. 4.7μF(M) 10WV	24-15-10	2
(1)-C47	EC516712	Styrol/C. 220PF(K) 50WV (Vert. Type)	24-11-3	2
(1)-C53	EC513944	Styrol/C. 100PF(J) 50WV (Vert. Type)	24-11-3	2
(1)-4	EJ249300	Jack Plate MU	31-5-136	1
(1)-5	EJ249333	Micro Connector 4P Plug MU	42-1-105	1

(2) TRACK SELECTOR P.C BOARD (MU-5315) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Q'ty
(2)-1	BA272092	Track Selector P.C Board Comp. (MU-5315)		1
(2)-SW1	ES249355	Rotary SW. SRM1043X04	25-6-104	1
(2)-L1	EO565558	Ferri Inductor FL9H 240μH(J)	23-1-213	1
(2)-2	EJ249366	Micro Connector 7P Plug MU	42-1-104	1

(3) SYS. CON P.C BOARD (MU-1318) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Q'ty
(3)-1	BA272002	Sys. Con P.C Board Comp. (MU-1318)		1
(3)-2	BA272013	Sys. Con P.C Board Comp. (MU-1318) (CEE)		1
(3)-3	BA272024	Sys. Con P.C Board Comp. (MU-1318) (CSA)		1
(3)-TR1to3	ET453486	Transistor 2SC711(E)(F)	45-1-67	3
(3)-D1to5	ED560913	Silicon Diode 1S2473VE	45-3-23	5
(3)-D6	ED224550	Silicon Diode 10D4 (CSA)	45-2-16	1
(3)-D6	ED249581	Silicon Diode SIQB20 0.8A 200V (RED)	45-2-74	1
(3)-D7,8	ED560913	Silicon Diode 1S2473VE	45-3-23	2
(3)-L1	EP300132	Relay MY4-02-US-L	47-1-32	1
(3)-SW1	ES258232	Slide SW. S-2930 (U/L)	25-3-129	1
(3)-CR1to12	ER376435	Spark Quencher 0.1μ+120 ohms 250WV (U/T, CSA)	41-1-35	1
(3)-CR13	ER570532	Spark Quencher 0.5μ+120 ohms 400WV (CSA)	41-1-58	1
(3)-R19	ER558461	Cement/R. 15W 1.5k(K) (Metal Ox. Film/T)	35-16-29	1
(3)-R22	ER554883	Cement/R. 7W 39 ohms(K) (Wire-wound Type)	35-16-4	1
(3)-R23	ER554861	Cement/R. 10W 250 ohms(K) (Wire-wound Type)	35-16-5	1
(3)-R24	ER554905	Cement/R. 5W 12 ohms(K) (Wire-wound Type)	35-16-3	1
(3)-C8	EC258355	Capacitor, Spark Quencher QC-05 (QC Type) (U/T)	24-16-10	1
(3)-C9	EC258377	MP/C. PEM271 0.47μF 250V AC (CEE)	24-9-118	1
(3)-C10to21	EC258298	MP/C. PEM271 0.1μF 250V AC (CEE)	24-9-118	12
(3)-4	EJ207854	3P Plug, PC	42-1-96	1
(3)-5	EJ249210	5P Plug, PC MU	42-1-106	1
(3)-6	ZS455207	Tapping Screw #2, 3x5 (BR)		4

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

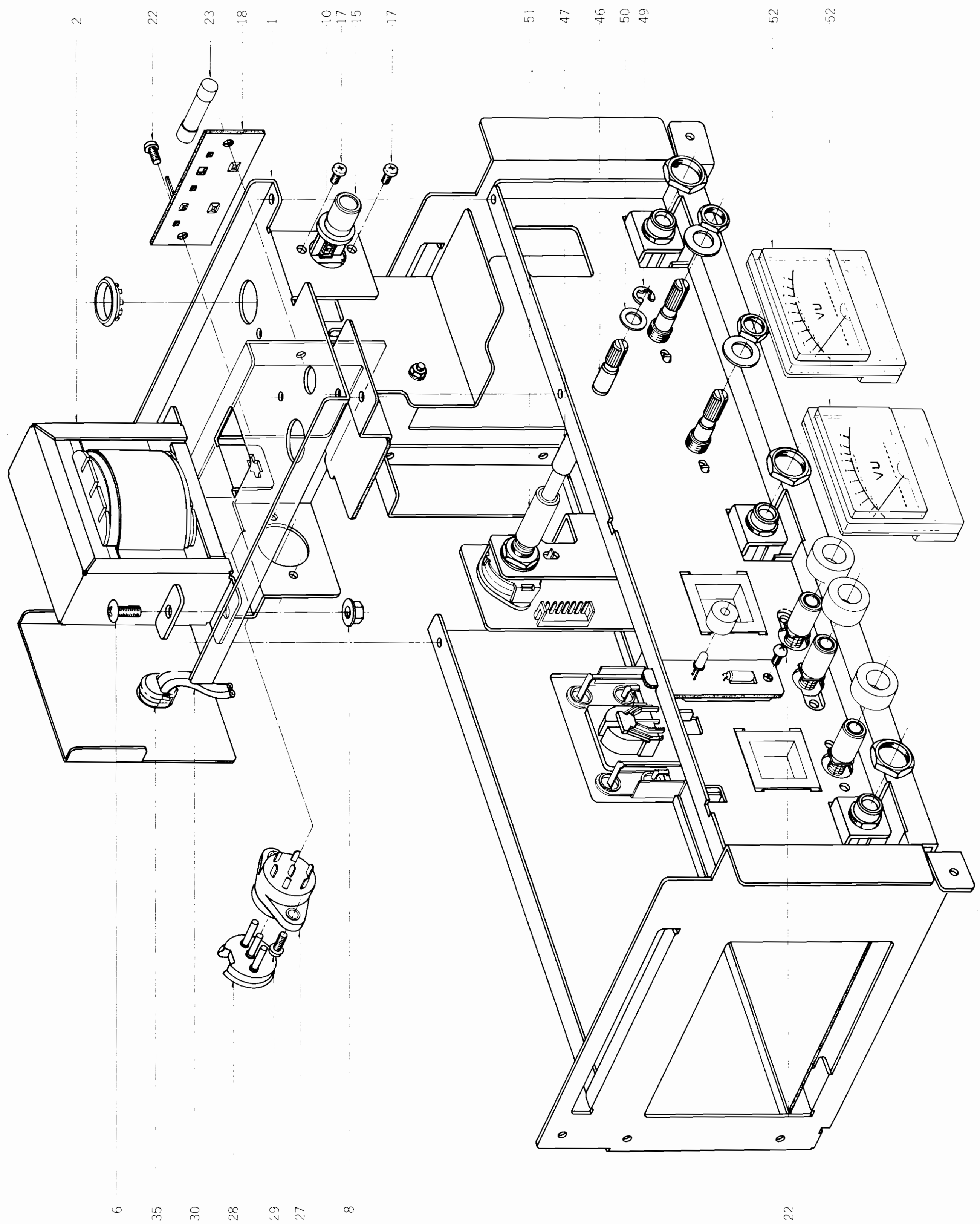
(4) POWER SUPPLY P.C BOARD (MU-5314) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Q'ty
(4)-1	BA272182	Power Supply P.C Board Comp. (MU-5314)	MU-9753	1
(4)-TR1	ET242370	Transistor 2SD234(Y)	45-1-81	1
(4)-D1	ED242368	Zener Diode WZ-240	45-6-37	1
(4)-D2	ED249581	Silicon Diode SIQB20 0.8A 200V (RED)	45-2-74	1
(4)-2	ZS421806	Screw, pan head 3x8		1
(4)-3	ZW273756	Nut M3, #1		1
(4)-4	EZ260381	Mylar Sheet P103KA	45-16-8	1
(4)-5	EZ209215	Insulator Bush B308D	45-16-7	1
(4)-6	ZS325495	Tapping Screw #2 3x6 (BR)		1
(4)-7	ZW273802	Toothed Lock Washer		1

(5) LAMP P.C BOARD (MU-5313) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Q'ty
(5)-1	EA258287	Lamp P.C Board	MU-5313	1
(5)-D1	ED249377	LED GL-3ARI	45-15-14	1
(5)-IND901	EL619064	Lamp (L/T) 24V 35MA	28-2-40	1

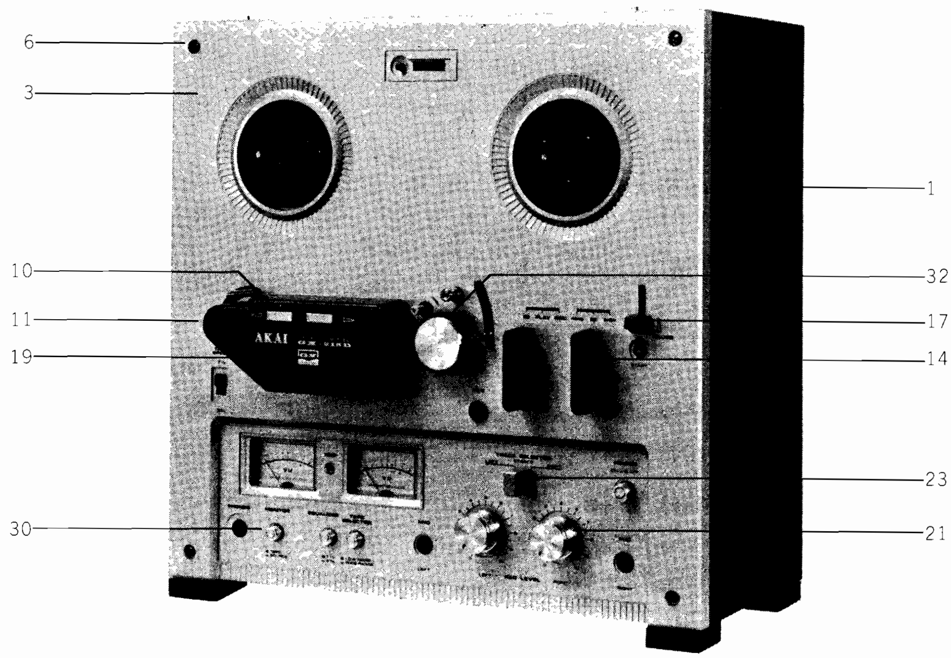
9. ILLUSTRATION OF AMP ASSEMBLY BLOCK



9) AMP ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		POWER SUPPLY BLOCK		
9-1	MZ280192	Trans. Base Part MU-3	MU-5302	1
9-2	BT249388	Power Trans. MUT-5 (U/T)	38-4-456	1
9-3x	BT249401	Power Trans. MUT-7 (CEE, VDE)	38-4-458	1
9-4x	BT249390	Power Trans. MUT-6 (CSA)	38-4-457	1
9-5x	BT249423	Power Trans. MUT-8 (BEAB)	38-4-459	1
9-6	ZS479463	Screw, truss head 4x10(U/T)		2
9-7x	ZS600816	Screw, truss head 4x8 (CEE, CSA, BEAB, VDE)		4
9-8	ZW413267	Flange Nut M4 (U/T)		2
9-9x	ZW413267	Flange Nut M4 (CEE, CSA, BEAB, VDE)		4
9-10	ES224436	Push SW. JP01 (U/T)	25-5-221	1
9-11x	ES242346	Push SW. JP17 (CSA)	25-5-224	1
9-12x	ES239218	Push SW. JP01 (TV-4) (CEE)	25-5-222	1
9-13x	EC699298	PE-9P Film/C. 0.1μF(K) 600WV (U/T)	24-3-8	1
9-14x	EC286198	Ceramic/C. AL-10 0.01μF(Z) 125WV (CEE)	24-5-69	1
9-15	SK694888	Knob 3 MU-3	CP-5019	1
9-16x	SK236970	Power Knob (BL)	MU-6320	1
9-17	ZS422076	Screw, pan head 3x5		2
9-18	EJ249557	Fuse Terminal Plate MU	40-1-125	1
9-19x	EJ249568	2P Fuse Holder (Small) MU (CEE, VDE)	40-1-129	1
9-20x	EJ249570	3P Fuse Holder (Small) MU (CSA, VDE)	40-1-130	1
9-21x	EJ262754	3P Fuse Holder (Small) (Wrapping) (BEAB)	40-1-142	1
9-22	ZS325495	Tapping Screw #2 3x6 (BR)		21
9-23	EF233447	Fuse 2A 250V	39-1-55	1
9-24x	EF258344	Fuse (SEMKO T Type) 800 mAT (CEE, VDE)	39-1-53	2
9-25x	EF591535	Fuse 0.8A 125V (CSA)	39-1-52	3
9-26x	EF258344	Fuse (SEMKO T Type) 800 mAT (BEAB)	39-1-53	3
9-27	EJ249467	Voltage Selector MU	42-1-109	1
9-28	EJ262732	Socket (Volt. Selector)	31-1-190	1
9-29	ZS447840	Tapping Screw #2, 3x8 (BR)		2
9-30	EW540123	AC Cord CUL 2.5M	26-3-20	1
9-31x	EW516600	AC Cord CEE VM-0065	26-3-28	1
9-32x	EW516475	AC Cord CSA 2.5M	26-3-20	1
9-33x	EW604585	AC Cord BSI	26-3-37	1
9-34x	EW604618	AC Cord KMA VM-0064	26-3-34	1
9-35	EZ631945	Strain Relief SR-4N-4	2-7-49	1
9-36x	EZ246936	Strain Relief SR-6W-1 (BEAB)	2-7-8	1
9-37x	EJ293927	3P Mini-connector Assy GX-215D (U/T, CSA)	MU-9703	1
9-38x	EJ295288	3P Mini-connector Assy GX-215D(CEE, BEAB, BDE)	MU-9703	1
9-39x	EJ258243	Terminal Plate, Wrapping Type 1L3P (CEE, VDE)	33-3-30	1
9-40x	EJ249502	Terminal Plate, Wrapping Type MU (CEE, CSA, BEAB, VDE)	33-3-29	1
9-41x	ZS434250	Screw, pan head 4x8, w/washer (BEAB)		1
9-42x	ZW273881	Earth Lug (BEAB)		1
9-43x	ZW413188	Nut M4, #1 (BEAB)		1
		ASSEMBLY BLOCK		
9-44x	ZS379350	Screw, pan head 3x6		4
9-45x	ZW260370	Nylon Rivet 3.4x5.5	2-7-56	2
9-46	MZ248938	SW. Connector A	MU-5306	1
9-47	MZ248940	SW. Connector B	MU-5307	1
9-48x	ZS417216	Screw, pan head 3x4		1
9-49	ZW270123	'E' Ring 4M	6-1-9	2
9-50	ZW260076	Washer (Nylon) D6.1x10x0.5t		1
9-51	TA646773	Joint	AA-5240	1
9-52	EM666450	VU Meter D18A68R	46-1-118	2
9-53x	EM236968	VU Meter D18B43R (BL)	46-1-160	2
9-54x	EJ297854	Mini-Connector Assy MU-3	MU-9704	1

10. PHOTO OF FINAL ASSEMBLY BLOCK



10) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
10-1	BC249164	Case Block Comp.	MU-6308	1
10-2x	BC287267	Case Block Comp. (BL)	MU-6308	1
10-3	SP247408	Front Panel	MU-6307/6314	1
10-4x	SP237036	Front Panel (B) (BL)	MU-6307/6314	1
10-5x	ZW299496	Panel Nut	MU-6321	1
10-6	ZS396044	Screw, binding head 3x8		4
10-7x	ZS297641	Tapping Screw #2 3x8 PW (Binding)		4
10-8x	MH249197	Head Cover Prop A	MU-6310	1
10-9x	ZW287190	Nylon Washer D6.2x13x2t		4
10-10	SB249063	Direction Button	MU-6301	2
10-11	SC249153	Head Cover	MU-6305/6316	1
10-12x	SC287100	Head Cover (B) (BL)	MU-6305/6316	1
10-13x	SZ639562	Head Cover Retainer B	ND-6018	2
10-14	SK249096	Mecha Knob	MU-6303	2
10-15x	SK287291	Mecha Knob (B) Part (BL)	MU-6303	2
10-16x	ZS253405	Mecha Knob Screw	7-1-46	1
10-17	SK259345	Pause Knob (C) MU-3	MR-612	1
10-18x	SK287280	Pause Knob (D) Part MU-3 (BL)	MR-612	1
10-19	SK425158	Pinch Roller Cap MR	MS-6020	1
10-20x	ZS312265	Pinch Roller Cap Screw	LD-630	1
10-21	SK631056	Single Knob CW	MY-6208	2
10-22x	SK287278	Single Knob (B) Part MU-3 (BL)	MY-6208	2
10-23	SK264892	Selector Knob B	CI-6020	1
10-24x	SK691288	Selector Knob (BL)	CI-6020	1
10-25x	SA428714	LM Rubber Foot, w/screw 4x25	LM-404	4
10-26x	SA679285	LM Rubber Foot	3-18-5	1
10-27x	ZW419646	Washer (SPC) D4.5x9.8x0.5t		1
10-28x	ZS324281	Screw, pan head 4x25		1
10-29x	ZS665550	Screw, pan head 4x15, w/washer		2
10-30	SK634410	Push Button Knob J TE	91-5051	3
10-31x	SK607127	Push Knob A (BL)	A5-5022	3
10-32	MP271170	Pinch Roller, LC D=38	LC-321	1

11. LIST OF INTERCHANGEABLE SEMICONDUCTORS

As far as service is concerned, in case the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SC458LG (C) (D)	ET391768	MU-5316	2SC693U (F) (G) 2SC1000 (BL) (GR) 2SC1312 (F) (G)	ET429647 ET622181 ET539987
2SC945L (Q) (R) 2SC945L (P) (Q)	ET635837 ET639437	MU-5316 MU-1318	2SC536 (E) (F) (G) (H) 2SC711 (E) (F) (G) (H) 2SC1641 (Q) (R) (S) (E)	ET246846 ET619727 ET603843
2SC1312S (G) (H)	ET603257	MU-5316	2SC458LG (C) (D)	ET391768
2SD234 (Y)	ET242390	MU-5314	2SD313 (D) (E) (F) 2SC1060 (B) (C)	ET522911 ET393614
1N34A	ED219464	MU-5316	1S188AM 1N60	ED562386 ED428204
1S2473 1S2473VE	ED624903 ED560913	MU-5316 MU-1318	1S1588 WG599	ED557447 ED514721
10D4	ED224550	MU-1318	1N4004	ED570273
10D2	ED224548		1N4003	ED570295
0.8A 200V	ED249581	MU-5314		
WZ240	ED511918	MU-5314	RD24A RD24A (MN)	ED229072 ED315415
GL-3AR1	ED249377	MU-5318		

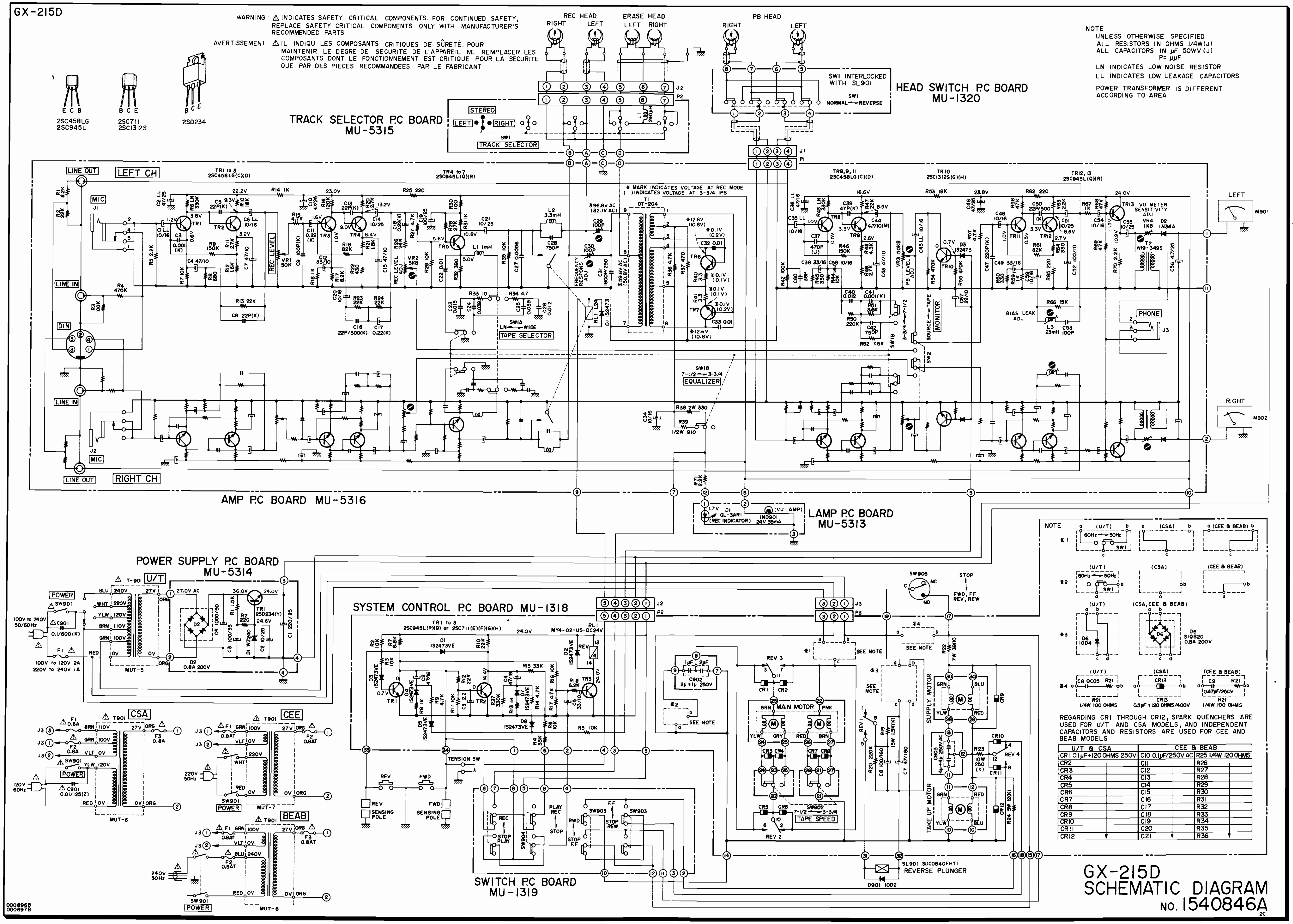
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SECTION 3

SCHEMATIC DIAGRAM

1. GX-215D NO. 1540846A SCHEMATIC DIAGRAM



U/T & CSA	CEE & BEAB	
CR1 0.1µF+120 OHMS 250V	C10 0.1µF/250V AC	R25 1/4W 120 OHMS
CR2 ↓	C11 ↓	R26 ↓
CR3	C12	R27
CR4	C13	R28
CR5	C14	R29
CR6	C15	R30
CR7	C16	R31
CR8	C17	R32
CR9	C18	R33
CR10	C19	R34
CR11	C20	R35
CR12	C21	R36